Popular HOME CRAFT

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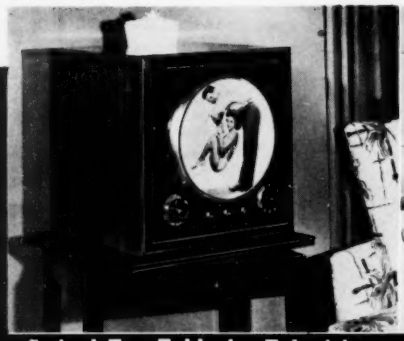

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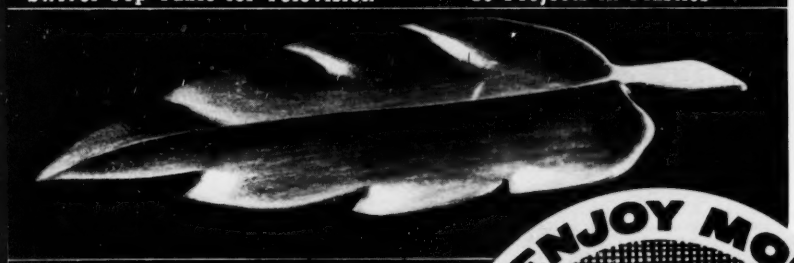
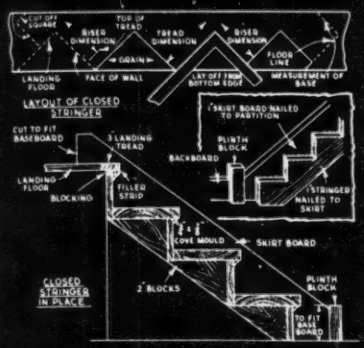
10 Projects in Plastics



Wood Carved Serving Trays



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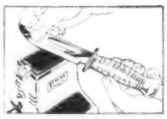

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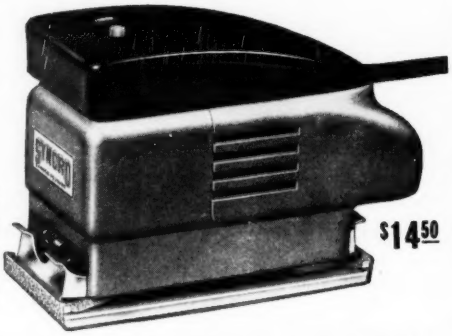

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VOL. 20, NO. 3 WHOLE NO. 125

Popular HOME CRAFT

America's First HOME WORKSHOP MAGAZINE

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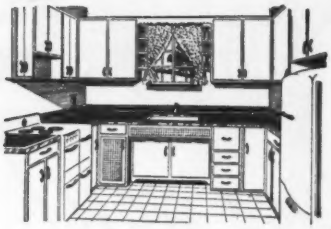

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Observations of the publisher

1950 Directory of Workshop Tools

Earlier this year our business department conducted a study among tool manufacturers, retail outlets and workshop hobbyists to find out if there was a need for a catalog of the tools used in the home workshop and for repairs around the home generally.

I wish space would let me quote some of the enthusiastic replies. You can take my word, though, the reaction was unanimously in favor of it. One executive of a particularly well-known tool company told us the need was so acute he thought we could put a $5 price tag on the directory and sell thousands.

It was our intention originally to publish the Directory of Workshop Tools separately. But we since have decided we could serve our readers best if we made this buyers' guide available to all of them at no extra cost.

To make this physically and financially possible the Directory of Workshop Tools is being produced in five or six sections and each incorporated in as many issues of POPULAR HOMECRAFT during 1950. For instance, the current issue contains the hand tools edition. Subsequent issues will feature the portable electric tools edition; power tools edition--wood; power tools edition--metal; and so on.

Your editors are making every effort to assemble as complete a directory as it is possible to. Questionnaires are being mailed to thousands of tool manufacturers--and then followed up at least twice by mail as well as by personal contact in those areas served by our several business offices.

Making News in the Publishing Field

News was made last month when the merger of OUTDOORS and OUTDOORSMAN was announced on the eve of the latter's 50th anniversary.

These two fine publications now have combined their best talents, circulations and facilities to become an even stronger and more important voice in the outdoor field. The new publication is known as "OUTDOORSMAN with which is combined OUTDOORS".

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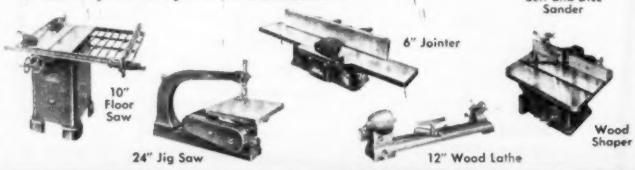

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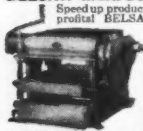

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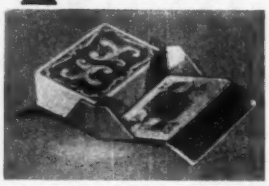

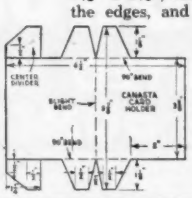

Canasta Card Holder

You can make this "quickie" winner in an hour or so. The materials called for are a piece of 32 oz. copper or brass 6½" x 5⅞", some fine emery cloth for the edges, and steel wool. The tools: Tinsnips, file, vise, mallet or hammer, soldering iron. The finish may be clear lacquer or floor wax. You may even substitute plastic for the copper or brass.

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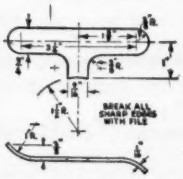

Vacuum Cover Remover

This "quickie" is for the kitchen; it will save your silverware! Rough cut the opener with a hack saw, from 1/16" stainless steel. File to shape and smooth all edges. Place the ends in a vise against a 2" diameter pipe and bend to shape with a soft faced hammer or mallet. Polish on a buffer. Drill a hole for hanging, if you wish. That's all—you can do it in an hour.

Send Your "QUICKIE" Entries Now

ENJOY MORE · HAVE MORE · SAVE MORE · make it yourself

***What is a "quickie"?**

A "quickie" is POPULAR HOMECRAFT's description of a one-night project which can be made by an average workshop hobbyist, with average tool equipment, in just a few hours.

(To be awarded each issue until further notice)

1) Print or type your name and address clearly.
2) Send entries to: Quickie Contest Editor, POPULAR HOMECRAFT, 814 N. Michigan Ave., Chicago 11, Illinois.
3) Winning entries remain the property of the magazine.
4) If you wish non-winning entries returned be sure to enclose self-addressed, stamped envelope.
5) Decisions of the judges will be final.
6) In case of tie duplicate prizes will be awarded.
7) Entries for one issue cannot be applied to the next issue unless they are re-submitted separately.
8) Contestants may submit as many entries as they wish, as often as they wish—as long as each is made individually.
9) Entries must be postmarked not later than February 5th for the March-April 1950 issue.
10) Photograph and sketch must accompany each entry.
11) State the number of hours required to complete your "quickie" entry.

ANNOUNCING... Lester Margon's book thousands of craftsmen have waited for years to own

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Walnut Tip-Top Table
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Antique Stand Makes Magazine Rack
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Pennsylvania Dutch Wagon-Seat Bench
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To Create is to Live

For years doctors have been prescribing hobbies as a remedy for jangled nerves, breakdowns, etc. In this guest editorial a prominent psychologist gives us the "why."

By Ben Sweetland

I AM a student and teacher of psychology, always interested in people and the reasons which make them happy or otherwise. I like to know the cause back of each effect. "Why should the act of creating something," I asked myself one day after finishing a piece of work in my hobby shop, "have such an exhilarating effect on one's spirits?"

The word "create" stuck in my mind. I remembered that in the first line of the first verse of the first chapter of Genesis the word *created* was used. Thruout Genesis, the first chapter of the Bible, we read of the *creation* of the heavens and earth, the *creation* of animal and human life.

People are referred to as "creatures." But up to this reflective period, I had not connected the word *creature* with *create*—which means that we came into being thru a process of *creation*.

As my mind flitted from one line of thought to another, "recreation" came to me. To most of us this work means taking time out: loafing, playing, resting, having fun. Actually, "recreation" means to *re-create*. If your body is run down, you rest to *re-create* more energy. When your mind becomes weary you do something which will *re-create* new thought patterns. Life itself is a process of *recreation*. Were it not for the perpetual *creation* of new tissue to replace the old, these bodies of ours would not last any time at all.

One of the first things we learn in childhood is that there are three essentials to life: Food, shelter and raiment. There is a fourth element just as important—*recreation*. We might exist for a time with food, shelter and raiment; but unless there is a phase of enjoyment, the question might well be asked: "Why live?"

Nothing stands still. It moves forward or backward. If we keep our thoughts on, and in, the future we stay young. When, thru a mind not constructively employed, we dwell in the past we play into the hands of Father Time.

We live in an era of more spare time than humans ever have known. Those gainfully employed average 40 hours each week. Deducted from the 168 hours available to us, this leaves 128 hours for sleep, food and—what?

A constructive hobby is the answer to a well-rounded life. Everyone can afford a hobby. The money we would spend otherwise in the pursuit of pleasure will prove more than adequate. No matter who you are, where you are, what you are—there is a hobby which will prove ideal for you. Hobbies, you know, cover the entire range of arts, sciences, music, literature and crafts.

Do not merely "take up" a hobby. Look for the hobby which will arouse your imagination to such a point that, instead of dreading your tomorrows, you will look forward to them. Those tomorrows will provide additional opportunities to indulge in your hobby. When you do find the right one you will accept wholeheartedly the slogan which hangs in my own workshop and which I have used for the title of this guest editorial: "To Create Is To Live."

Ben Sweetland is called "Radio's consulting psychologist". He has been broadcasting for over 16 years, and for more than three years has supplemented his psychology programs with a weekly hobby broadcast (KSFO, San Francisco).

He is a teacher of psychology at Mac Master-Paine College in San Francisco. As a lecturer he has addressed audiences in virtually every major city of the U.S. and Canada. He is the author of "Seven Keys to Personal Power", "Simplified Child Psychology", "14 Golden Secrets", and others.

The home workshop is more than a hobby with Dr. Sweetland. He finds it a vocational laboratory as well.

Ben and Edel Sweetland, whose names make up the Edelben Crafters "trade mark".

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Rugged, Multi-Purpose **SHOPSMITH**
Is Complete Power Workshop in One Compact Unit

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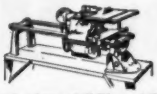
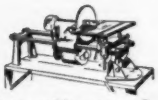


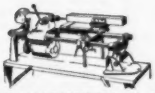
Depth of cut 2¼" Big 14½" x 17" tilting table. Greater capacity—cuts to center of 8' plywood panels. Unique microquill adjustment for accurate cutting.

2. 12" DISC SANDER



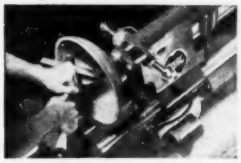
More working space. Extra features. Disc can be fed into work for safety and accuracy. Miter gauge and rip fence for easier squaring, mitering and jointing.

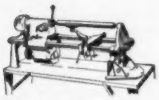
3. HORIZONTAL DRILL



Only SHOPSMITH has it. Extremely useful when drilling or mortising large, heavy pieces. No need for jigs. Permanently grease-sealed ball-bearing action.

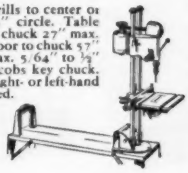
4. 33" WOOD LATHE





33" between centers. 15" swing. 4" quill feed. Speeds 875 to 3500 rpm. Finger-tip adjustable tool rest always slides parallel to work, locks in any position.

5. VERTICAL DRILL PRESS



Drills to center of 15" circle. Table to chuck 27" max. Floor to chuck 57" max. 5/64" to ½" Jacobs key chuck. Right- or left-hand feed.

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complete except for motor. With special ½-hp., ball-bearing, capacitor-type motor (shown). **$199.50**

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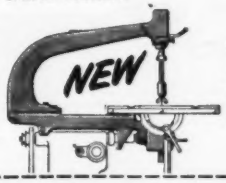

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5 66 LAMPS. 88 pages. More than 50 projects. 350 illustrations. Here are 56 lamps and lanterns—floor and table lamps, nursery and desk lamps, novelty lamps, pin-ups, etc. Wood, metal, plastic, combination. How to make lamp shades. Discusses sockets, wiring, fixtures. You can make some in an evening, others may take a week. Inlaying, veneering, finishing also covered.

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10 45 TOYS & GAMES (For junior years). 88 pages. 45 projects. 350 illustrations. Scooters and jeeps, roller coasters and skate sails, spiral railways and model airplanes, skyrocket guns and indoor tennis tables. Its step-by-step instructions, and 350 illustrations, make it an ideal build-it-yourself book.

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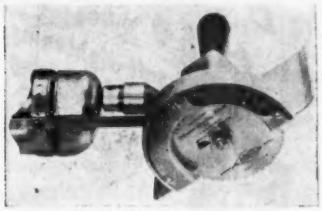

anteed. Retails at $9.95; replacement blade $1.60. Made by Arrow Metal Products Co., 140 W. Broadway, New York, N.Y.

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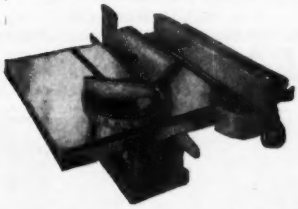

any angle up to 45°. Raising arbor is fitted with lifetime sealed ball bearings. Miter gauge, rip fence, saw guard and splitter are included. Foley Mfg. Co., 3300 NE Fifth St., Minneapolis 18, Minn.

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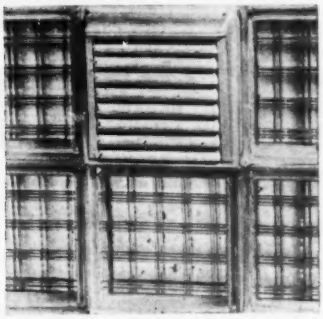

ventilation. Louver and screen removable from interior of room. Held in place by interlocking arrangement and one screw. Cleaned with damp cloth. Manufactured by Westwood Engineering Co., 3118 W. Lake St., Chicago 2, Ill.

Contour Machine for Sawing and Filing

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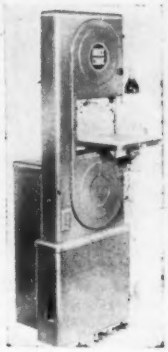

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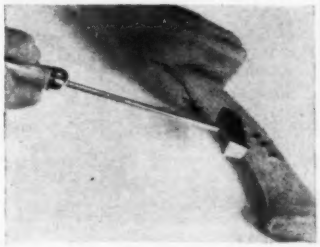

plastic, rubber. Merely heat the head over the flame and impress on material. Price $3.50 by White River Industries, P. O. Box 681, Muskegon, Mich.

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Rips, cross-cuts and cuts diagonally. Cuts fast but not as smooth as D-3200.

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Another type tooth for cross cutting, ripping and mitre cutting.

DE LUXE CUT-OFF (D-40)
For clean, fine, precision cross-cutting.

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For straight and true rip sawing.

Also available:

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6"—7"—8"—10" blades for cut off, rip and combination work.

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In Canada, write: 2-20 Fraser Ave., Toronto 3, Ont.

5" Portable Band Saw

"Hasco" a new portable tool, combines the versatility of a band saw and a forming tool in a single unit weighing approximately 30 pounds. Guard, top, and case are made of heavy gauge steel, welded and reinforced. A sheet-metal partition

in the case prevents chips from lodging in the motor. Double pulleys permit blade speeds of 700 FPM and 2400 FPM. The shaper attachment uses rotary files to cut sharp contours. Introduced by H. & S. Machine Co., 866 Riverside Dr., Methuen, Mass.

Belt Sander

A new all-purpose 3" belt sander has been developed by the Johnson Mfg. Co., Lincoln Park 7, R. I. Made of aluminum,

the sander can be used either as a stationary or portable machine, depending on its power connection. Priced at $10.95 postpaid less motor.

Pressure Paint Roller

Introduces a new way to paint flat surfaces. Smooth or stipled finish in one operation. Air pressure is supplied from a pump on the tank, the painter con-

trolling the flow of paint with a valve button on the handle. The Speedy Pressure Paint Roller retails at $39.95 and is marketed by W. R. Brown Corp., 5720 Armitage Ave., Chicago 39, Ill.

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No groups of blades to change — no discs or "dials" to assemble or reassemble — no more limited cuts.

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DOES SAME WORK AS $200 UNITS—precision built, big capacity. Backed by 52 years experience. Thousands of satisfied owners.

EMRICK SHOP includes all 5 Tools shown above, using ONE motor. Has TWO Power Spindles—NOT necessary to move machine frame for any operation. Only $39.95 cash, or on Easy Payments. 10-Day FREE trial. MONEY-BACK Guarantee.

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EASY, QUICK MOUNTING. No locking key or wrenches needed. No cement, glues or wedges. Patented mounting method saves valuable time. Abrasive tightens while in use. Ideal for use on drill presses, grinder stands, electric drills, motor arbors, etc. Drum is 2" in diameter, 2" long. Adapter and drum head joined with 1/4/20 threads. Economical replacement strips cut from standard sheets.

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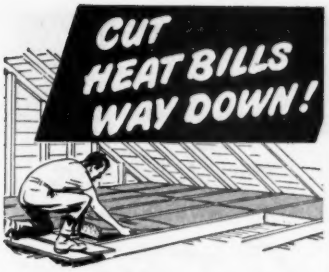

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CRAFTLINE TOOLS Dept. A 203 So. Sierra Vista Monterey Park, California

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Shaping on the drill press is made practical with the Quick-Kraft Shaper Head kit. Many precision shapes such as tongue and groove, inlay grooves, radii, inside lip edges, certain picture frame and table-top edges may be cut in hard or soft woods and plastics. Priced at $3.95 by Lloyd F. Walner, 921 E. Cedar Ave., Burbank, Calif.

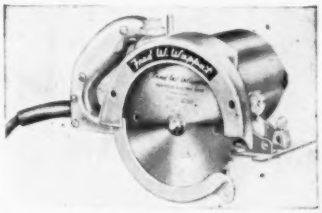
3-In-1 Jig Saw

One unit performs the functions of jig saw - sander - filing machine. Safe for youngsters as well as grown ups. Built of light weight cast aluminum, operates

on 110 volts A.C. Overall dimensions 10 x 7½ x 8½". $12.00 complete with 3 project patterns and 2 pieces of wood. Distributed A. L. Atkins & Co., 4364 Elston Ave., Chicago, Ill.

6" Electric Hand Saw

Maxaw has 6⅜" blades that cut to a full 2" depth on square cuts, and cuts 2" dressed lumber at a 45° angle. Makes all jack-rafter cuts on light building jobs around the home. Built-in depth adjust-



ment, bevel adjustment, trigger-type switch. Works in any position; fitted with suitable blades it cuts transite, marble, brick, concrete, tile. Manufactured by Fred W. Wappat, Inc., Mayville, N.Y.

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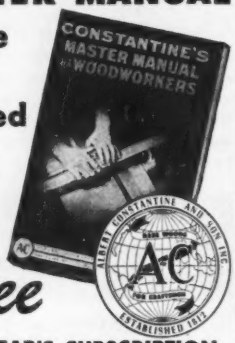

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burrs, shapes. The Hobby Tool features a push-button lock for instant tool change, thumb control switch, fine balance. Available in 2 kits, DeLuxe in a steel box with 50 accessories at $23.50; Standard in a carton with 2 accessories at $16.50. Product of The Dumore Co., Racine, Wis.

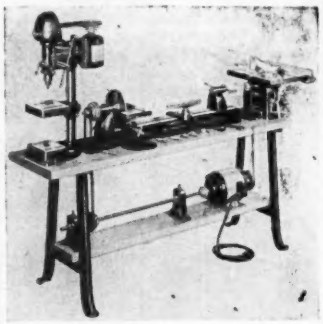
Slip Joint Plier

A new development in slip joint pliers; offset pistol-grip handle; for hard-to-get-at jobs. Normal pull on the handle

tightens the grip and gives more holding power for wire twisting or pulling. Retails at $2.20. Manufactured by Utica Drop Forge & Tool Corp., Utica, N.Y.

Handi-Shop Workshop

A compact "one-bench" workshop for the individual Delta Homecraft power tools. With it machines are always ready for use, eliminating the need to change the setup for different operations. Comes in



3 different models, each capable of 27 workshop tasks. A single motor is required on 2 of the 3 models. Introduced by Power Tool Division of Rockwell Mfg. Co., Milwaukee, Wis.

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MODEL 135 (illustrated above) only $29.95 for 1½" to 12" diameter saws and cutters.
MODEL 160 only $49.50 for 1½" to 16" diameter saws and cutters.
Tables on above models tilt either side to sharpen angular faces.
MODEL 280 EX only $8.95 for 7" to 8" diameter saws.
MODEL 100 EX only $10.95 for 7" to 10" diameter saws.
MODEL 130 EX only $17.50 for 2" to 12" diameter saws
MODEL 590 Swivel Vise graduated to 180° only $7.95.
Grinder stand and grinding wheels not included in price of fixture.
MODEL 300 Dust Proof Ball Bearing Grinding Wheel Stand with 30" "V" Belt $14.95 (illustrated above).
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Diamond Wheel Dresser and Holder $5.95 standard and $7.95 Deluxe.

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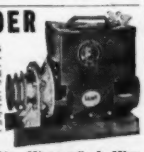

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LEJAY MFG., 815 LEJAY Bldg., Minneapolis 8, Minn.

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$3.95

FIG. 1

FIG. 2

FIG. 3

FIG. 5

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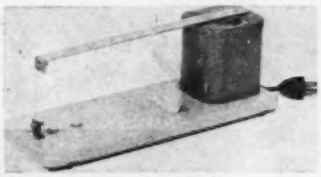
Thermo-Saw



An improved model of the Thermo-Saw, incorporating a new on-off switch, has been produced by Crimpseal Co., 5914 S. Racine, Chicago. Operating on the heat principle, it is designed to cut jig saw patterns in wood, balsa, fibre, foam rubber, plywood, paper and plastics. The manufacturer states that it will accommodate up to 14" by 36" in ¼" plywood. Since work requires no turning, the saw could be used on a dining room table. Operates on 110V, 50 or 60 cycle, AC. Price $4.95.

Portable Spray Kit

The Payswell Spray-pak weighs less than 17 pounds including the gun. Self contained, with compressor, motor and gun all in one unit. Sprays one quart of paint or any sprayable liquid in 4 minutes at more than 50 lbs. air pressure. Plugs into any 110 volt AC or DC outlet. Pistol grip handle and trigger action permit one-hand operation. Used for the quick and thoro application of oil and water base paints, lacquers, varnishes, stains, liquid waxes and plastics, weed killers, mothproofing liquids, disinfectants. Price of gun alone is $59.95; complete with all accessories $79.95. Made by Sellco Corp., 801 Andrus Bldg., Minneapolis 2, Minn.

Hobby Horse

It looks like a saw horse but is in reality 8 handy items in one: Saw horse, portable work bench, two vises, tool tray, nail and screw tray, stepladder, scaffold, picnic table base. For home hobbyists and professional craftsmen. $12.95 from R. B. Fleming Mfg. Co., Box 9647, Dallas, Tex.

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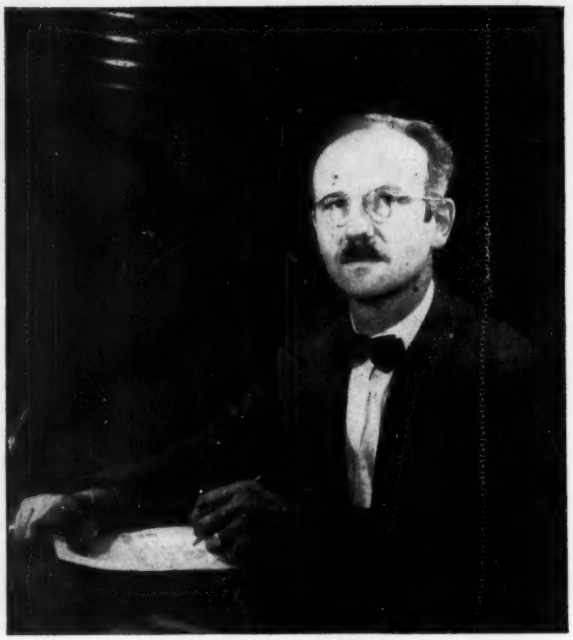

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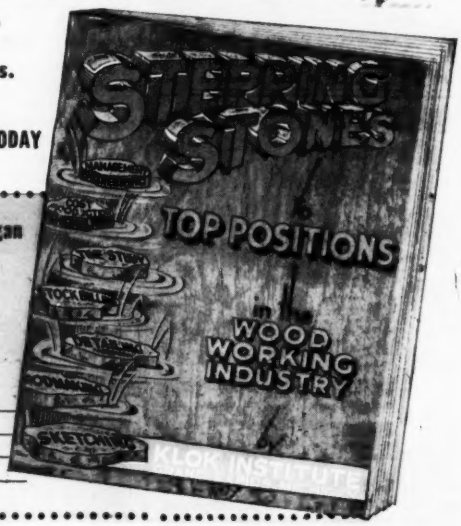

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Saw Blade

Cocker Saw Co., Inc., Lockport, N.Y., introduces this novelty tooth combination saw blade which will both rip and cross

cut. It eliminates the changing of saws on the machine. Also manufactured in the hollow ground type.

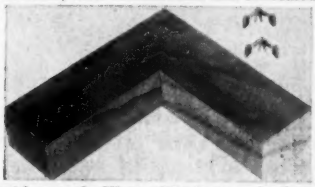
Hand Saw Filer

This motor-driven filing machine for hand saws, according to the manufacturer, speeds up the sharpening of saws. It is

made of cast iron and is designed to fit any bench. Uses ¼ h.p. motor. Produced by Burr Mfg. Co., 8931 Venice Blvd., Los Angeles 34, Calif.

Wood Fastener for Miter Joints

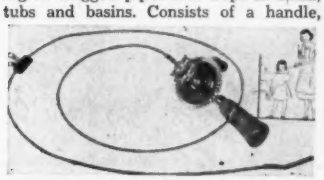
Designed to minimize the danger of splitting when joining wood. Made of hardened steel; can be driven by an ordinary hammer, then countersunk and concealed



with wood fillers. Eliminates dowling, mortising, tenoning or nailing. Chevrons are manufactured by E. B. Packard Co., Inc., 139 Cedar St., New York 6, N.Y.

Drain Pipe Cleaner

The Jiffy Plumber cleans out slow-draining or clogged pipes and traps in sinks, tubs and basins. Consists of a handle,



turning crank and flexible shaft which is inserted in the drain to be cleaned. Eliminates using dangerous chemicals. Stow Mfg. Co., Binghamton, N.Y.

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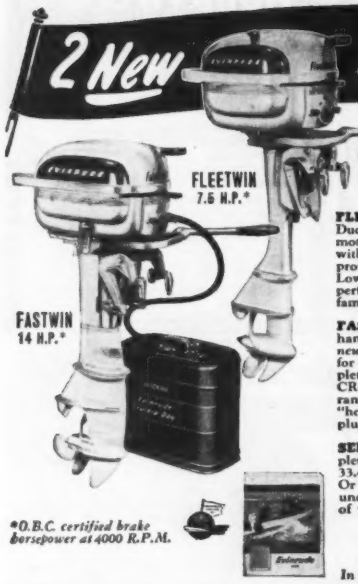

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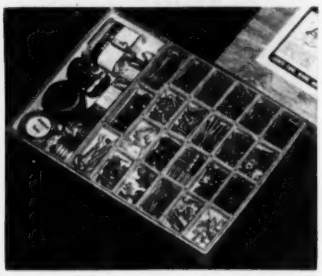

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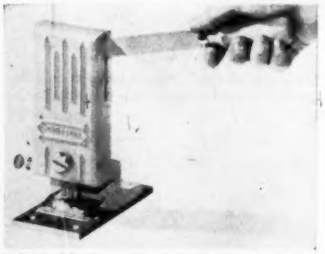

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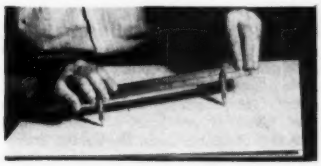

or scale these heads make an accurate compass, height gauge, inside or outside calipers, and scriber. Used in both woodworking and metal working.

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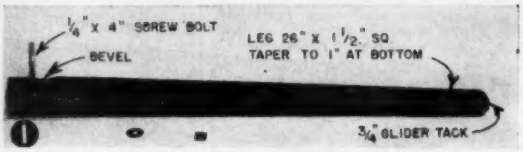
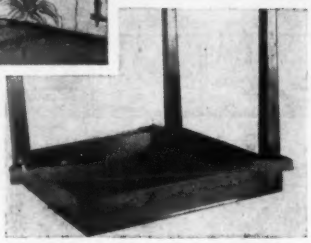
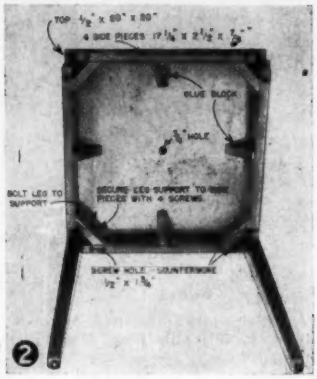
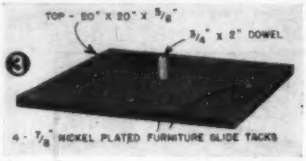
Revolving Table for your Television Viewer









A Timely Piece

By PERRY S. GRAFFAM

THIS revolving table allows the television set to be viewed from the angle best suited to your furniture arrangement. It has two tops, one that glides to any position and one that is attached permanently to the frame.

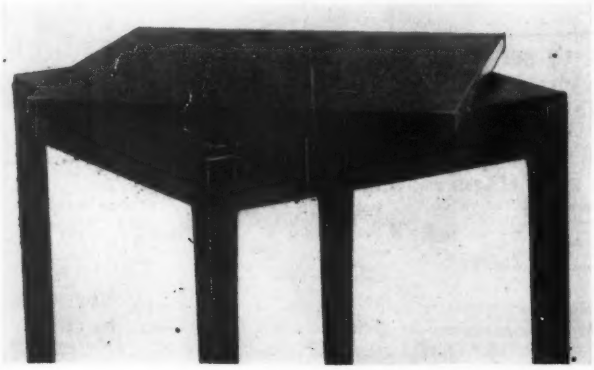
The table is simple in construction. Begin with the legs. They are made from 1½" square stock 26" long and tapered to 1" square at the foot (Fig. 1). A ¾" glider tack is placed in the bottom of each leg. Near the top place a ¼" combination screw bolt. Bevel off the edge slightly so that the screw bolt may be inserted.

Next make the table box frame. Four pieces of solid lumber 17¼ x 2½ x ⅞" are required. Bore ½" hole in each at each end to within ¾" of the way thru. Run a small drill the rest of the way. Now make your four corner braces and the four glue blocks.

Now make the first table top. ⅜" plywood, 20" x 20" can be used for this. Fasten the frame and top together, using glue and screws (Fig. 2). Be sure the screws from the side pieces do not go thru the ⅜" plywood top. A ¾" hole should be drilled in the exact center of the top (Figs. 2 and 3). Place the legs in position and bolt to the corner braces.

To make the glider top (Fig. 3), a piece of solid lumber 20 x 20 x ¾" is best suited. In the exact center of the under side glue a ¾" x 2" piece of dowel rod. A two-way wood screw will give added support to this rod, in addition to the glue. Next insert four ⅞" glider tacks at equal distances from the center post.

Finish to suit. A hand rubbed finish will make the table match your hand rubbed television cabinet.



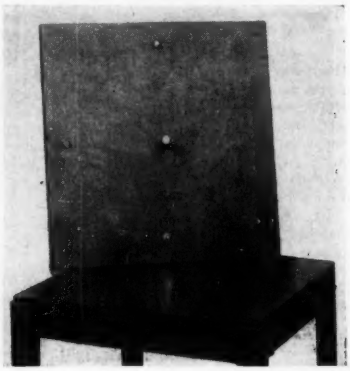


Photo 1

Photo 3

Photo 2

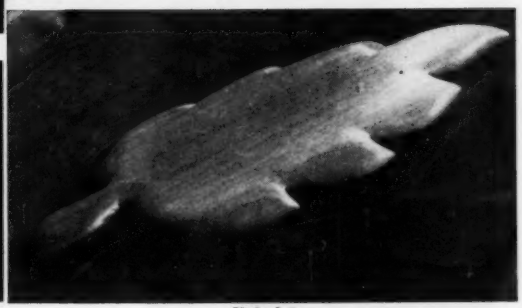


Photo 4

"Back to Nature" Trays

By EDNA McFARLAND

Photo 5

THIS tray (Photos 1 and 2, front and back views) was designed from an eucalyptus leaf and made of Philippine mahogany. When finished it measured 27" from end of stem to leaf tip and 7½" across the widest part.

The design for Photos 3 and 4, front and back views, was inspired by a young ivy leaf. Photo 5 shows how divisions may be carved in. Fig. 6 is the pattern for the eucalyptus tray. The size of any of these may be altered to fit the wood.

Fig. 7 is the pattern for the ivy leaf tray; its finished size is 19½" x 9¾". Fig. 8, pattern for oak leaf tray is 14½" x 6".

White poplar, cedar or mahogany are good woods to carve. Trace pattern on wood—cut out with jig saw, then carve.

Photo 9 is included to show how to keep the tray firm while carving and how to hold the gouge. Use the right hand to push the tool and the left hand to control it.

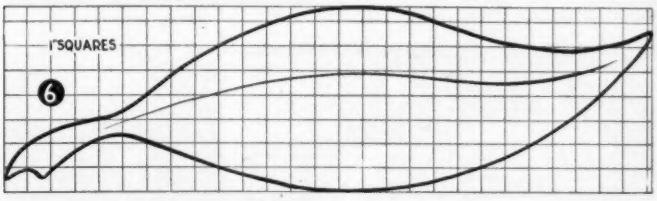
A ½" deep gouge and ½" fishtail were used. Tools must be kept very sharp for a clean cut. If the grain is cutting rough or fuzzy you are going in the wrong direction. Carve the tray so that the inside and outside edges will be rounded.

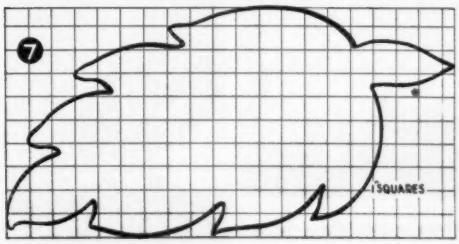
Do not use sandpaper on the carving. The portion of the tray touching the table, however, should be sanded so it will sit firmly.

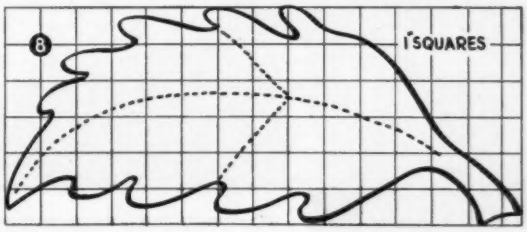
Finish by rubbing well with the hand or a clean cloth to remove all traces of sawdust. Then apply a thin coat of Johnson's floor wax (paste form), letting it dry 20 or 30 minutes. Polish briskly. Roughen slightly with fine sandpaper.

Apply a second coat of wax and polish. Repeat this procedure until you have built up four or five coats.

Photo 9

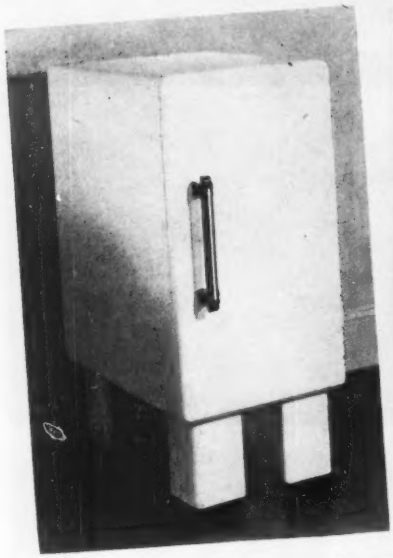


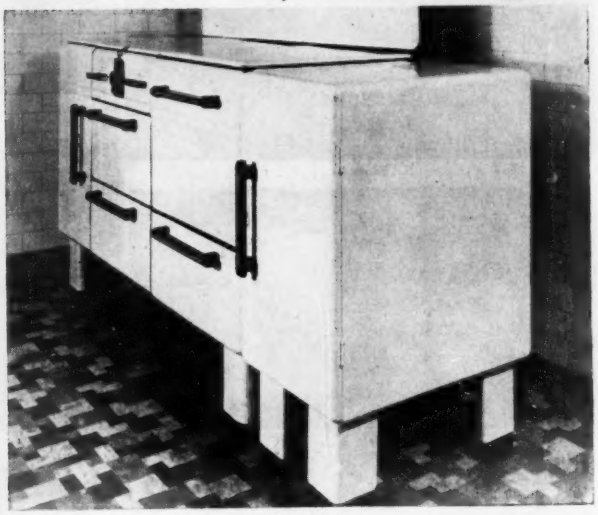




Cabinet To Match Your Stove

By W. T. WARDE





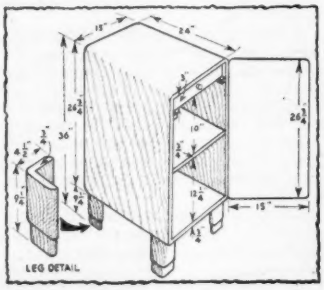
Cabinet and stove.

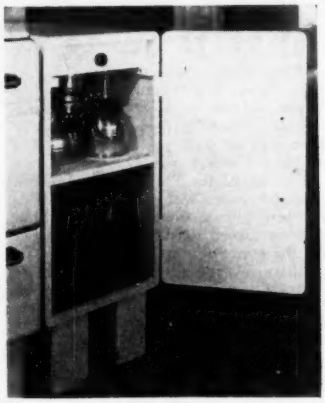
ADDITIONAL cabinet space in the kitchen always will be welcome. Here is a way to add extra storage space in a practical way at very little cost. By building a cabinet to match the stove you place the extra storage space right where it is needed—next to the stove. At the same time, you give the kitchen an added touch of smartness.

This cabinet is easily movable, due to the metal gliders used on the legs, and to its lightness.

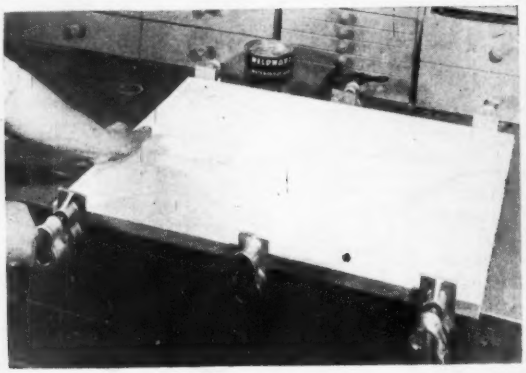
Obviously, it is not practical to follow the design and dimensions shown in the accompanying photos, unless your stove is of the same design. These photos show how this cabinet was made to match the particular stove. The important feature to watch in matching a stove is to follow the main characteristics of the stove, leaving out the unessential parts of its design.

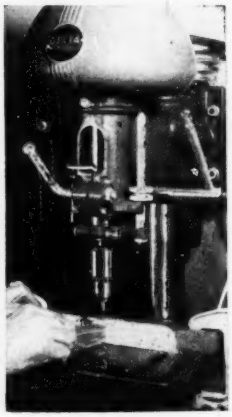
This cabinet was built of select Ponderosa Pine boards, dowelled and glued together to make the required widths.





Cabinet open.





Left—Resawing for drawer sides. Center—Gluing up sides. Right—Routing groove in handle.

All corner joints were rabbeted and glued. The legs were glued and screwed for added strength. The handle was made of black plastic rod, bandsawed to shape and the groove routed in on the drill press. This handle could have been made of wood and enameled black, with almost equally good results. The groove was filled later with white enamel to match the handles on the stove. The drawer supplies usable space for spatulas, basting spoons and other kitchen utensils.

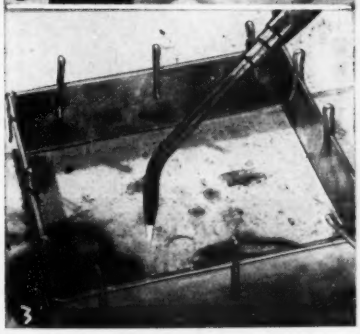
A very careful sanding job was done on the outside of the cabinet in order to obtain approximately the same high finish on the stove. Several coats of high grade refrigerator enamel were given the finished job, with sanding between each coat. Extra care taken in the finishing of the paint job will more than repay the effort expended.

Dime Store *to* Drawing Room

By BILL LUTHER

PHOTO 1

2



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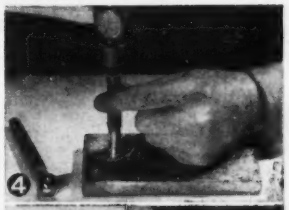

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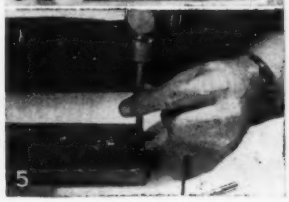


5

COMBINING glass, this ash tray makes an expensive looking project. A 6" square glass tray from the dime store is enclosed in a highly polished hand-wrought copper case. (Photo 1.)

From a sheet of No. 18 gauge soft copper, cut out the side strip and the bottom piece. Bend the strip into a square frame, making clean 90° corners. Bind tightly with wire; silver solder the corner. Preheat over a gas flame while soldering unless a heavy duty torch is available.

The sides are decorated along both edges with square wires, one twisted and the other plain. 1/16" square copper bus bar obtainable at radio supply houses is looped into a roll, heated dull red, and plunged into a pickling solution of dilute sulfuric acid. This operation softens the metal and removes the tinning coat.

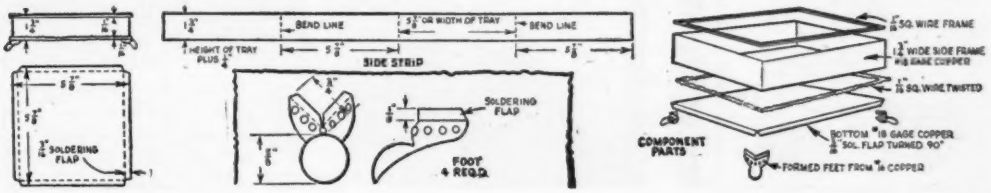
Fasten one end of the annealed wire in the vise. Slip an empty spool over it and hold the other end in a wrench. Hold the wire taut and twist into a tight spiral.

Cut off the untwisted waste and file a 45° miter on one end of the wire. Carefully measure between the corners and file nearly thru the wire with a square file at these points. (Photo 2). Bend at the notches and try on the frame for a close fit. Pin to a soldering block; silver solder each joint. The untwisted wire is bent and soldered in a similar manner. Tin the inner faces of the wire frames with soft solder. Flux the tray sides; position and clamp with heavy cotter keys used as clamps (Photo 3). Sweat together.

Deeply score the bend lines on the bottom piece to facilitate easy bending of the soldering flaps. Tin these, push bottom up into side frame, sweat together.

The blanks for the feet are sawed out of No. 16 gauge copper, filed smooth and annealed. Place the blank on a block of lead or wood and, using a ball-tipped punch, arch the legs and form the ball foot (Photo 4). Use a small round punch to make the beading along the sides of the legs (Photo 5). Sweat the feet to the tray corners.

The inside of the copper box is given a soft "brushed" finish to contrast with the highly polished exterior. Use a medium grit abrasive cloth (about No. 180) and rub in one direction only. The outside is buffed to a high polish using tripoli for "cutting down" and rouge for "coloring". Clean off all traces of compound with lacquer thinner and, while still wet, dip in a good grade clear lacquer. Hang up on a wire hook to dry.



Some simple but effective tips on

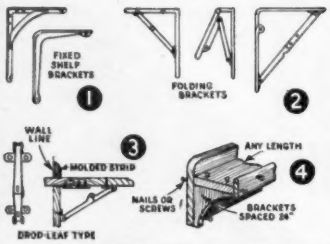
Putting Up Shelves

By JOHN P. ARNOLD

Built-in shelves, style for kitchen, breakfast alcove, etc. (See Fig. 15).

CONSIDERING that a shelf is nothing more than a horizontal board supported in some fashion and that it can be constructed satisfactorily with a minimum of time, labor and tools, it may seem idle to discuss shelves. However, there are shelves and shelves—and shelves!

The simplest of these is a board supported by cast or pressed steel brackets (Fig. 1) which are screwed to the wall. Folding brackets (Fig. 2) also can be obtained which are useful for shelves built in passageways, etc., where at times they may obstruct the moving of objects. Fig. 3 shows another construction similar to that of drop leaf tables, for reducing the width of deep shelves.



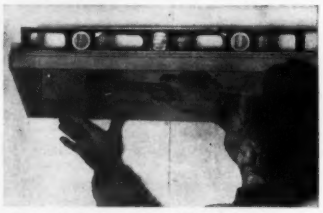


Photo 4—Preassembled utility shelves can be put up quickly and are readily taken down. Locate the studs and fix with nails or screws.

Another form of rough shelving consists of two boards joined to form a right angle. It is supported by wooden brackets at spacings of about 18" depending on the length of the shelf (Photo and Fig. 4). These are erected by screwing the backboard to the wall studs. They are removed quickly when rearrangement is necessary. Such shelves are useful where constant changes are made.

Most shelves, however, are built in on the job and their construction is sometimes governed not only by their purpose but by the possible means of fixing them securely. When the shelves extend between two opposing walls it is possible to dispense with brackets, by resting the shelf board on supporting strips nailed to the studs on two or three sides.

Fig. 5 shows a typical shelf built into the alcove of a hall closet. The wall support serves to attach hooks for coat hangers and the purpose of the filler piece is to bridge neatly the space of several inches between the shelf edge and the nearby window trim. Triangular shelves also are built in the angle of two walls.

Unless moulding covers the joint shelv-

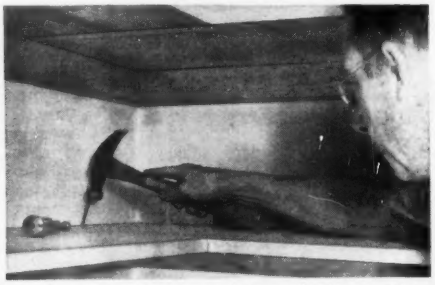
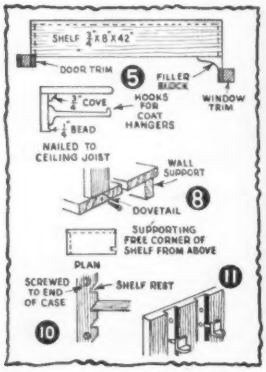
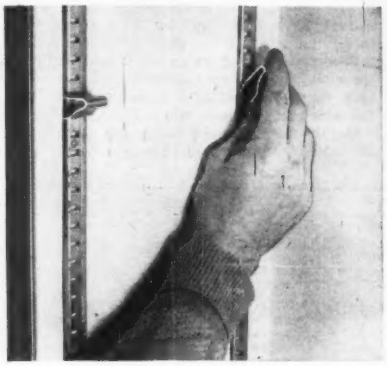


Photo 6—(Left) Shelves at eye level where the joint is not concealed by a wall strip or molding should be scribed to the wall and fitted. Plaster walls are not as straight and flat as they look. Photo 7—(Right) Linen closet shelves should be deep, with generous vertical spacing between the tiers. Such shelves often are continuous, running around two or three sides of the enclosure at the same level. Where the shelving meets, dowels, splines or stopped tongue-and-groove joints are indicated.





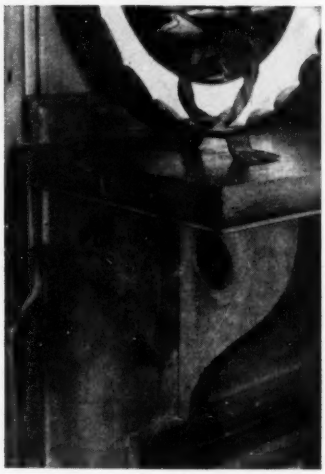
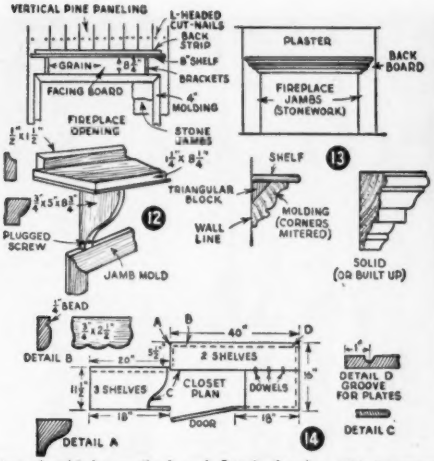


Photo 12—Typical Colonial overmantel; added support obtained by means of backstrip over shelf and brackets butted on jamb molding.

Photo 9—Adjustable shelves increase storage capacity, are particularly desirable in bookcases. The metal "track" and supports are installed easily. The methods shown at left require little or no hardware and are cheaper.



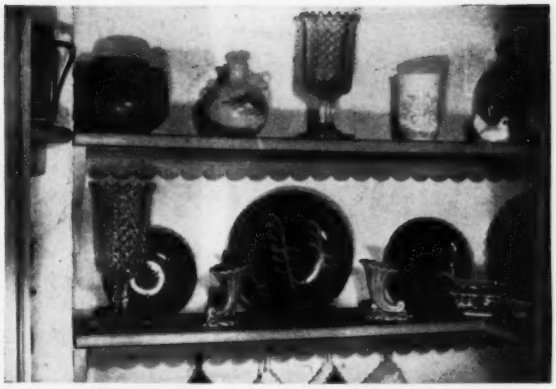


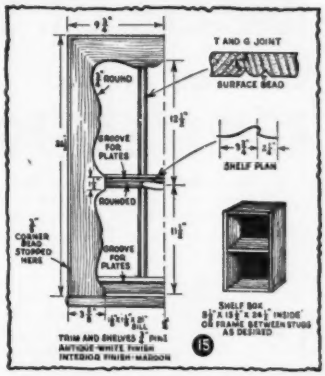
Photo 14—Decorative shelves in a shallow dining room closet increase storage capacity by utilizing space otherwise wasted and also afford a means of displaying cherished glassware and china.

ing should be scribed and fitted closely to the walls (Photo 6), particularly when they are erected below eye level. Rows of shelves in linen closets should be deep and well spaced vertically. These generally run continuously around two or three sides of the closet at the same level (Photo 7). Where the shelves butt against each other dowels, splines or stopped tongue-and-groove joints are indicated.

Shelves holding considerable weight require strengthening at the corners; often conditions demand that the support must be taken from above. In such cases, the end of the shelf may be dovetailed and the supporting piece, about 4/5" x 2", nailed to the ceiling joists (Fig. 8). Old time carpenters frequently used this method in constructing hanging shelves.

There are many ways of securing vertical adjustment for a series of shelves. This is particularly desirable in bookcases, where storage capacity would be lost if the shelves were fixed. The conventional track and metal supports (Photo 9) are an effective way of obtaining adjustment. As a rule, the end pieces of the case are grooved and the track set in flush, so that the shelves can be fitted closely, but this is not necessary. Several other methods which do not require expensive hardware are shown in Figs. 10 and 11.

These examples are of common shelving, but such construction can be more elaborate, as there are occasions when appearance is just as important as practical use. Fireplace overmantels, particularly Colonial styles which are characterized by extreme simplicity, pose special problems. The 8' mantel shelf (Photo and Fig. 12), for which the architectural plans allowed only two brackets, was given additional support by butting them against the molding of the fireplace opening and nailing a backstrip against the wall above the shelf to counteract the leverage of weight placed on the shelf. Narrower mantels often are supported merely by built-up molding (Fig. 13). Originally these were worked out of solid stock by Colonial carpenters, but that is not necessary in reproducing them.



Ornate shelving occasionally is desired for displaying glassware and china. Often an odd-shaped closet interior can be fitted with attractively scrolled shelves, such as in Photo and Fig. 14. They have the added advantage of utilizing space that otherwise would be wasted.

Shelves can be built into the walls, either framing between the studs or by constructing a box form which is cut into the wall. An interesting example is shown in Fig. 15 which was designed for a breakfast alcove. The opening was cut in the wall and the box set in flush, after which the scrolled trim was applied. Grooves were run about 1¼" from the back of the shelves to support plates on edge.

Colorful Key Rack

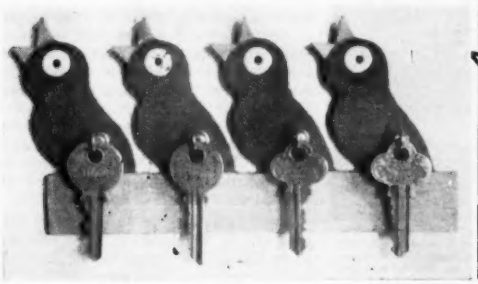
QUICKIE Project

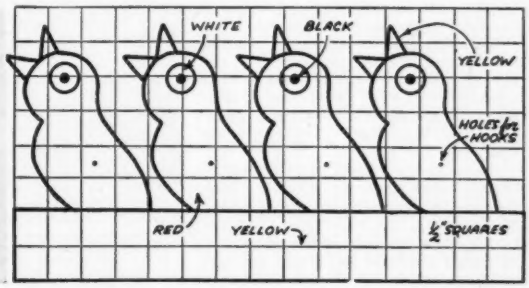
By CARL SORENSEN

A SCRAP of plywood and four small cup hooks are the only materials required for this perky key rack.

Enlarge the pattern to size by means of the squares, transfer to ¼" plywood, and jig saw to shape. Punch-mark the positions of the hooks, sand the piece thoroly and finish with quicky-drying enamels in colors of your choosing.

Screw the hooks in place, tack a small picture hanger to the back end of each bird—the rack is ready for service.





Guns are best stored and displayed in a cabinet designed for that express purpose. Here is one of the best we have seen. Complete details of its build-it-yourself construction are given on pages 20-22, October 1949 issue.

Civil War carbines, many of them exceedingly rare, occupy a prominent place in the Bangson gun collection.

Unusual hobby:

REJUVENATING OLD FIREARMS

E. C. Bangson, veteran gun expert and collector, of Minneapolis, has more than 200 old guns which he keeps in excellent condition with methods that can be followed easily by most gun owners.

By KEN BERGLUND

E. C. Bangson's collection of Kentucky rifles is one of the finest in the Upper Northwest.

BANGSON recommends removing the varnish first with varnish remover to rejuvenate stocks that are scarred or damaged. Then the wood should be rough-sanded and the stock given a coat of vinegar. After the vinegar dries, the wood should be sanded again with coarse and finer sandpapers until smooth.

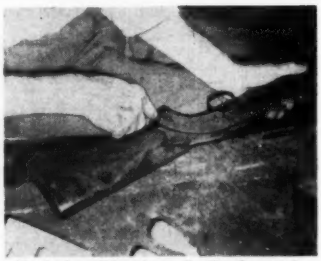
Depressions in the wood are removed by placing a water soaked rag on the marred area and applying heat with an electric iron. This draws the crushed fibers to the surface. The stock should be sanded again until it has no marks on it.

A coat of raw linseed oil is allowed to remain on the stock for 24 hours. After that the wood should be hand rubbed. This process, applying linseed oil and rubbing the stock by hand, should be continued until the stock does not take any more oil.

A high gloss final finish can be obtained by using French polish. This is made with equal parts of turpentine, alcohol, white shellac and cooked linseed oil. Half an ounce of beeswax dissolved in alcohol is added and the polish shaken well. Four or five drops of this preparation are put on the surface of the wood and the stock rubbed until dry. A highly satisfactory finish results.

Checkering, the process of grooving areas of the stock to "dress up" the firearm, can be mastered with a little practice. The square or diamond shaped area on the stock that is to be checkered is marked out with pins in each corner of the design. A length of piano wire drawn around the pins and tapped sharply with a hammer will make an impression in the wood and mark the outside dimensions.

The common checkering kit contains three tools with notched, knife-like blades. One of the tools, the starter, heavily scores the outside lines. The balance of the checkering is done with the other twin-bladed tools which form two parallel grooves at each stroke. These are cross-hatched in the pattern desired by making additional grooves crosswise.



Checkering—"dressing up"—the firearm by grooving areas on the stock is mastered easily with a little practice. The small chisels found in woodworking sets are an aid in forming rosettes or working on curved areas.

Those who are checkering for the first time should be careful not to run grooves beyond the outside dimensions and thus mar the pattern. After rubbing down the checkering with pumice stone and oil, the grooves are cleaned with a brush and alcohol. A light coat of shellac is a good finishing touch but no oil should be used which will gum up the checkered pattern.

Blueing gun barrels is a painstaking task but the results are well worth the effort, according to Bangson who has blued many of the guns in his collection. Blueing kits contain all the necessary solutions and include steel wool and emery cloth.

Before the actual blueing is begun, the gun must be scrupulously clean. It is dismantled and all traces of oil or grease are removed with gasoline. The surface is brightened with emery cloth to remove spots and rust. Metal parts are wiped with a soft cloth dipped in alcohol. The surface must be kept free from grease, dirt, oil and finger marks and the parts to be blued must not be touched with the bare hands after the degreasing process. Canvas gloves are worn in handling the gun and the gun surface should be rewashed with alcohol if necessary.

Instructions for the Major Speed Process will be of interest to those planning on re-blueing their guns for the first time or for comparison with other methods.

First, plug both ends of the gun barrel. Then suspend barrel or part to be blued over gas flame, electric plate, blow torch or any clean heat. Warm long enough to cause a drop of water to sizzle when dropped on barrel.

Apply priming coat solution with swab stick. Let gun stand for 10 minutes to permit solution to work. Wash barrel with clean cool water, using sponge or cloth.

Rewarm barrel to slight sizzle again. Apply coat of blueing solution with swab using long, even strokes and enough solution to cover surface completely and evenly. Now apply more heat, warming the barrel or parts until the surface looks greasy and the red deposit disappears.

Honing down the bolt of a firearm aids smooth, sure action of the piece.

Set aside for 20 minutes to permit chemicals to complete their action.

Wash barrel with cool water, using sponge or scrub brush. Rub dry with cloth. Polish with steel wool. Repeat the warming and swabbing process until desired depth of color is reached.

To finish the blueing job dissolve two tablespoons of sal soda, lye or baking soda in one pint of warm water. Wash barrel and all parts blued with this solution. Rinse in clear water, dry and polish carefully with steel wool. Apply finishing wax and buff with a soft cloth until the surface is dry to the hand.

A touch-up solution is provided to finish off sights, spots, bald marks and scratches. The process just described is suitable for all guns except those with soldered shotgun barrels. A slightly varied process is used for those.

Ever try Wood Carving Silhouettes?

By DICK HUTCHINSON

Same subject on powder box and plaque.

Left—Final cover before painting.

Right—Final appearance of finished cover.

How silhouette is carved in pine.

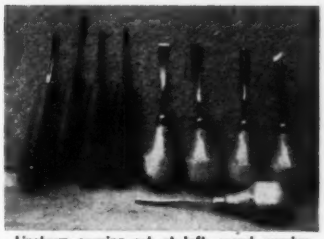
THE work is so simple that anyone can make silhouettes. Only equipment required is a set of wood carving or linoleum carving tools. The best wood for this sort of carving is white (sugar) pine; it is soft and cuts well.

You don't have to be an artist to make the drawings. Several good silhouette subjects are illustrated here and any number of others may be cut from magazines and books.

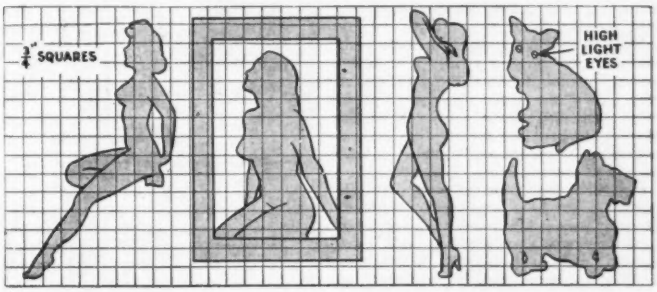
Lay the picture to be carved on the wood. Slip a sheet of carbon paper between and trace the picture onto the wood. Then with a sharp knife cut the outline about 1/16" deep into the wood. Begin carving with the curved gouge.

The curved gouge not only makes an attractive finish but, being curved, automatically cuts in and out—a straight gouge frequently makes too long a cut. Do not allow the tool to slip and gouge out a piece of the silhouette!

Any finish may be used in this type of art. The background may be given a coat of white shellac which leaves the wood in its natural state, or the pieces may be painted in colors, or bronzed in silver or gold. In any case, finish the background completely and then paint the silhouette with flat black oil paint.

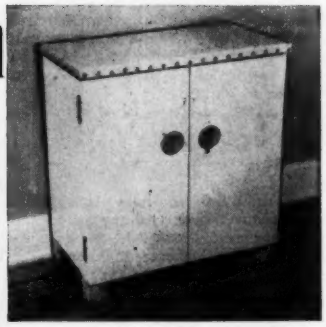


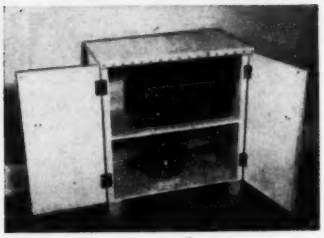
Linoleum carving set at left, wood carving set at right.



BUFFET for the Dining Room

By ALLEN C. HAMILTON





DRAWER FRAME materials required are (dimensions are net, finished):

No. Pieces	Item	Thickness	Width	Length
4	Uprights (Partition)	¾"	2"	32"
2	Plywood (Partition)	¼"	13"	32"
2	Filler strips	½"	1"	11"
8	Filler strips	½"	2"	11"
8	Drawer runners	¾"	1"	11"
5	Cross frame pieces	¾"	2"	23"
5	Cross frame pieces	¾"	1"	23"

ENAMELED plywood, natural oak and imitation leather combine effectively in this buffet for a distinctive modern design. Especially for a small dining room, this modern breakfront cabinet features storage compartments on either side in addition to the four main drawers.

TOP AND BASE are of the same outline dimensions, the top of 1" plywood and the base of ½" plywood. Top and base overhang the cabinet frame ¼" around the sides and front. A sanding block, with a side piece to hold the block square with the work (Fig. 8), makes an excellent tool for finishing plywood edges. Any cavities in the edges should be filled with Plastic Wood before sanding. The back edges of the top and base are rabbeted ⅜" x ⅜" to within ¼" of ends to take backing panel.

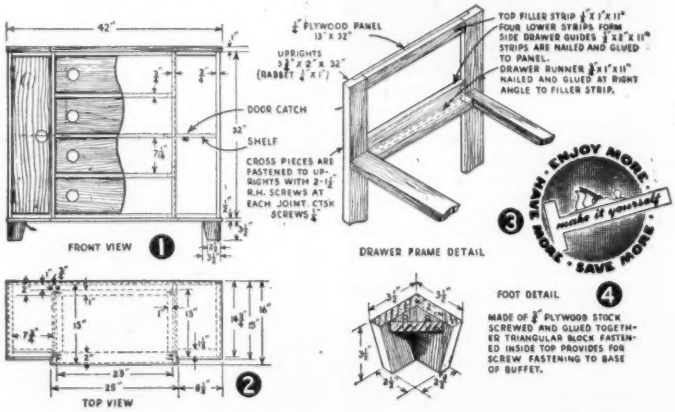
Rule across the base two lines establishing the position of the drawer frame. Also mark border ¼" in from edge around the sides and front of the base to serve as a check in assembling the frame on the base piece.

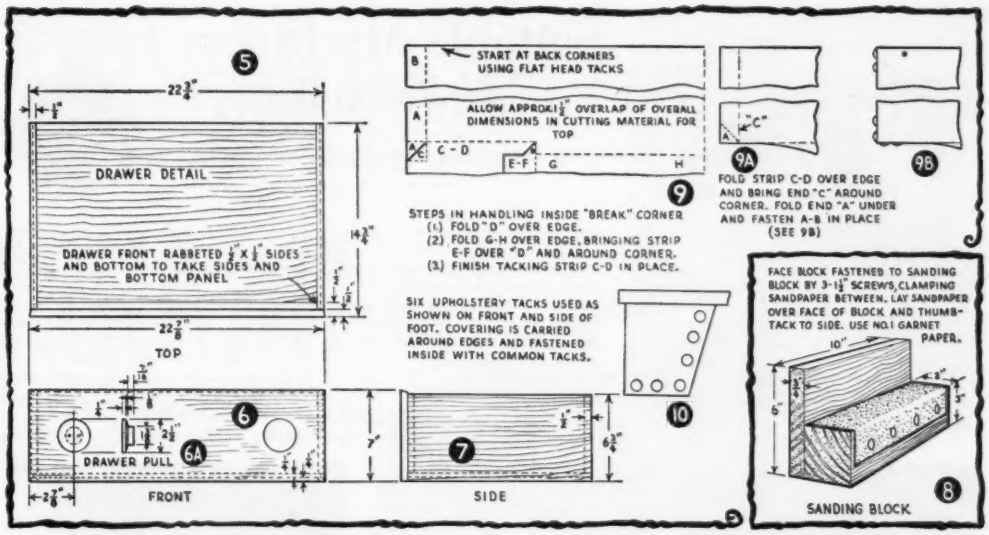
Note from Fig. 3 that partitions are made of two uprights rabbeted ¼" x 1" and nailed and glued to a 13" x 32" panel of ¼" plywood. Next, nail and glue the filler strips in place, forming the side drawer guides. The drawer runners are nailed and glued at right angles to and flush with lower edge of filler strips.

Now drill the screw holes in partition uprights for fastening cross members. Drawer frame now can be assembled, fastening cross members first with light finishing nails at each joint. Set the assembled frame on the base and check it for size, also square it up with the base before placing screws at each cross member joint. Two 1½" R H screws are countersunk at each joint and the holes filled with Plastic Wood. When assembling on base bear in mind that top and base both overlap ¼" on sides and front. Drawer frame is fastened to base by screws thru the base into the cross pieces and bottom drawer runner pieces.

SIDE COMPARTMENTS are of ¾" plywood 32" x 14¾". The rear edge of each panel is rabbeted ⅜" x ⅜" to take backing panel. Take particular care in finishing front edges of panels and of drawer frame, as these surfaces form the front cabinet frame outline which will be enameled. Any dents or holes should be filled and sanded. Cut mortises for hinges 2¼" from ends in inside front edge. Hinges are 2½" brass with removable pins. Be sure side panels are cut exactly the same height as drawer frame or top will not set evenly.

Before securing side panels in place cut the side compartment shelves of ½" material, measuring 7¾" x 12¾". Then cut top and bottom door plates of 1½" x ¾" stock; these pieces should be exactly the





same length as the width of shelf, 7¾".

Screw the bottom door plates to base on quarter inch line. Mark lines across the inside center of the side panel and across center of drawer frame partition panel to mark shelf position. Shelf is mounted on four small metal angle pieces near corners. These should be fastened to partition and side panel before setting side panel in place. Next, set side panels in place and fasten shelf to right angle pieces. Drive a 2" finishing nail thru the lower front corner of the panel into the bottom door plate, which will hold the panel in position while securing to the base with four 1½" screws.

TOP ASSEMBLY: Fasten the top to the ends with four 2" screws countersunk in each end. Then turn the cabinet upside down and run four 1½" screws thru the front and rear cross members of the drawer frame. Complete the frame by fitting the top door plates in place.

¼" plywood or a composition board may be used for the backing panel, which is nailed and glued to the rabbeted edge of top base and sides and to the drawer frame uprights.

The vertical side doors are of 1" plywood and should be finished to allow about 1/32" clearance in door frame. Set door in place in frame with cardboard strips around edge and mark position for hinge mortises with those cut in the edge of the side panels. After cutting door mortises screw hinge to door frame first, set the door in place and check door half of hinge with mortises to see that hinges will match up properly when assembled.

DRAWER: See Figs. 5, 6, and 7. Drawer front is of 1" plywood rabbeted ½" x ½" on sides and lower edge to take sides and bottom. Note ¼" groove in sides to take drawer bottom. Check individual drawer frame dimensions carefully so that drawer fronts can be finished to correct clearance. Sand all drawer stock carefully before assembling. Drawer pulls are turned of white oak and are secured to drawer front by two 1¼" screws thru the drawer front (Fig. 6-A).

FEET detail are shown in Fig. 4. Made of ¾" plywood, parts are glued and screwed together. The triangular piece fastened inside the top provides for screw fastening to the base of buffet. After the 4 feet have been assembled sand the ends on a sanding disc, also round off the sharp edges around which the leather covering will be stretched.

FINISHING: Before painting go over all exposed surfaces carefully, filling dents and holes and any cracks in joints. Hinges are removed from door and door frame and are mounted back in place after painting is finished.

Three coats of finish are applied, as follows (top is not enameled):

First coat: Enamel undercoat. Sand with 2/0 paper before applying second.

Second coat: Ivory, enamel two thirds, enamel undercoat one third. Mix, thinning slightly with turpentine. Sand this coat with 3/0 sandpaper before applying final coat.

Third coat: Straight Ivory enamel.

COVERING: The top and feet of the cabinet illustrated were covered with imitation leather, antique Ivory finish, secured in place around the edge with decorative brass upholstery tacks, mottled Ivory-brass heads.

The covering operation is not too difficult for the home worker, providing one has a helper to stretch the material tightly in place as it is being tacked. However, this would not be an expensive job of covering should the worker prefer to have this done in an upholstery shop.

In cutting material for the top allow 1½" overlap of the overall top dimensions. Before starting covering operations be sure all sharp edges and corners are rounded slightly with sandpaper so covering will not be cut when stretched over edges and corners.

Lay the material over the top and start tacking in place at the back edge, folding the edge over the back approximately 1". Fasten at one corner of the back edge of the top with four or five large common tacks, approximately 1" apart. Stretch material tightly along rear edge and secure other corner in same manner. (See Figs. 9, 9-A and 9-B.)

Make mitered cuts for back corners (same as shown in Fig. 9 for front corners), fold material and secure with upholstery tacks, one about ¼" from corner and spacing others approximately 1⅜" apart. Corners are secured first, using two or three tacks on each side. Make mitered cuts only as each corner is secured, since material cannot be cut to set pattern beforehand. Pull the material tightly towards the front corners; secure in same manner.

While instructions call for 1⅜" spacing of upholstery tacks around edge, exact spacing depends on placement of corner tacks. After corner tacks are in place the worker should mark out points with a pair of dividers to set out the remaining space to nearest possible 1⅜" spacing. Even spacing of tacks around the edge is important to the finished appearance.

After securing the four corners finish tacking the back edge and ends in place. The "break" corners are secured next, cutting and overlapping as in Fig. 9. Material then is tacked over the front edge. With a pair of heavy shears trim material back to approximately ¼" below the lower edge of the top and fasten in under the top with small tacks. Cabinet should be turned upside down for this work. Use an awl for making starting holes for tacks and hold a heavy cardboard guard against the enameled side of the buffet to protect surface.

FOOT COVERING: Cut a strip of material several inches wider than the height of the foot, stretch over the outside surface around the slanting edges and tack in place on the inside. Covering is further secured by upholstery tacks of the same type used on the top (Fig. 10). Finish covering by trimming excess material even with top and bottom of foot.

Feet are secured to base with 2 wood screws and are set back ¼" from edge of base to line up with cabinet frame.

Suitable Machinery for Furniture Making

By WILLIAM W. KLENKE
Author, Designer and Mastercraftsman

PHOTO 19—Small model of radial saw ideal for cutting tenons as well as all other cuts.

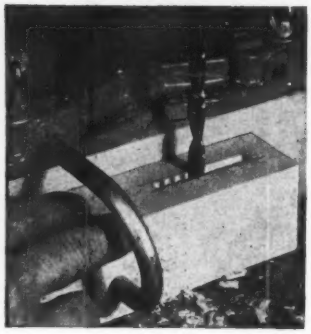


PHOTO 20—Machine spur bit for cutting mortise.

Part 3

PARTS 1 and 2 appeared in the September-October and November - December 1949 issues of *Popular Homecraft.*

Drill Press as a Mortiser, Shaper, Router, etc.

Not so many years ago, the drill press was considered strictly a machine for the metalworker. Today, however, with the many attachments and general improvement in design, the drill press can be converted into an excellent mortiser, shaper, router, etc., by a quick and simple interchange of the spindle or other parts.

In order to do good clean shaping or smooth routing on the drill press, it is necessary to step up the speed greatly; which can be done by a countershaft arrangement or sometimes with just a change of pulleys.

Mortising

A hollow chisel with a wood bit inside is necessary for cutting mortises by machinery. Always work with the working face of the stock against the fence. Cut the two end holes first, then the others in between. Fig. 7 and Photo 19. Thru mortises should be cut a little over half the depth from one side; then reverse the stock and cut the opposite side all the way thru.

Where equipment is lacking for regular mortising, use a machine spur bit instead of the hollow chisel—(Photo 20).

Shaping and Routing

A careful study of the illustrations will explain how shaping and routing are easily accomplished on a drill press. Fluting and reeding on turned members also are jobs that can be done on this machine. Make a special device for holding the turned part, and then a jig to slide this thru. Remember to step up the speed in order to make a clean cut.

Dowel joints can be made easily and accurately on a drill press. A jig of some kind should be employed. Short dowels can be cut with a plug cutter.

Grinding planer irons always are a problem to the woodworker. This, however, is done easily in the drill press by using a cup grinding wheel and some sort of wood block to hold the knives.

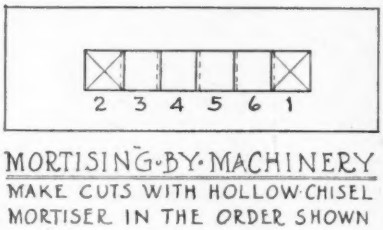


FIG. 7

Editor's Note: Wm. W. Klenke has written a number of articles and books on furniture making. His latest and best known is: "Klenke's Furniture Book." It is devoted to the best group of projects ever assembled by this prominent craftsman. In his book Mr. Klenke has incorporated many attractive plans for pieces based on modern adaptations as well as his exact copies of Chippendale, Hepplewhite, Sheraton and Duncan Phyfe. In these articles in POPULAR HOMECRAFT Mr. Klenke draws heavily from his latest book.

The drill press is a great labor saver for putting many screws in a job. Bore the various holes with a regular machine drill and then countersink where necessary.

Shaper and Router

The craftsman of today who is ambitious to make fine furniture will find almost unlimited uses for a good shaper. With the shaper, all sorts of strip moldings and edges on table tops (regardless of the shape) can be run with the greatest efficiency and speed. Besides, the shaper is good for jointing the edges that are to be glued and for cutting rabbets, grooves, etc. A vertical sanding spindle also can be put in place for sanding curved work.

The spindle on the shaper should have a speed near 10,000 r.p.m. to insure smooth cutting, especially across the grain. To accomplish this means the motor must be geared to 3,450 r.p.m. and fitted with a pulley having a ratio of about 3 to 1.

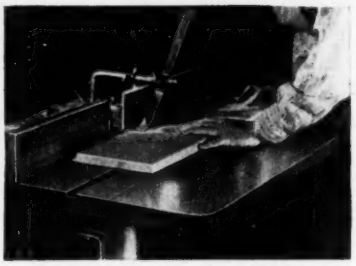


PHOTO 21—Shaper built for big and small jobs.

PHOTO 22—Smaller type shaper.

There are many types of shapers. The one shown in Photo 21 is built for quite large jobs as well as smaller ones. With the great variety of cutters now available (or ones you can grind yourself), almost any molding can be run. With this type, the work must be taken to the machine, which is often a disadvantage, as when molded edges are to be run on work that is assembled. Photo 22 shows a much smaller type of machine, which is a combination shaper and router. With it, many molded edges can be run. It is excellent for inlay work, cutting the gain for hinges and, with a special attachment,

(*Continued on page* 195)

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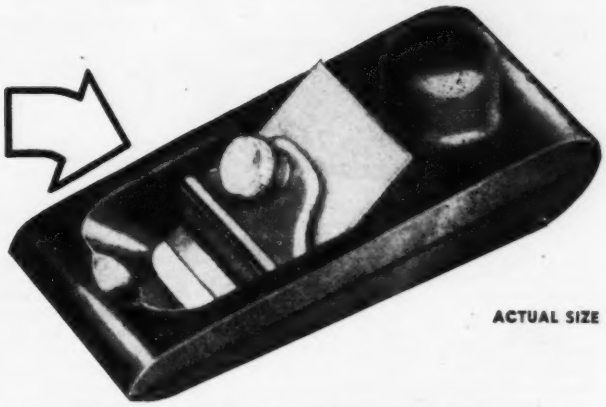

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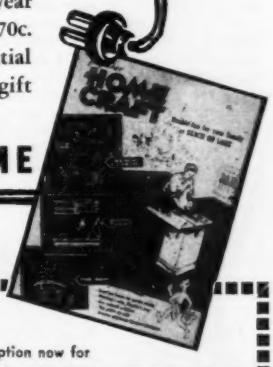

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LIQUID PLASTIC | The Modern Marvel

Assortment of plastic projects.

WALTER T. WARDE writes: "Modern science has brought to the hobbyist one of the most fascinating of materials, from which he can create objects of utility and beauty, such as were previously made only by large manufacturers with expensive equipment. The materials which have opened up such a vast and wonderful field for the creative endeavors of the home crafter are the new liquid plastics. With them he can make a thousand and one projects without costly equipment or materials. They can be easily fabricated without past experience.

Projects can be completed in one evening, starting with the syrupy liquid and finishing with the polished piece of plastic —in brilliant transparent colors, in crystal clear, or in solid opaque colors and in any shape. The list of projects which can be fabricated from liquid plastic is long. Here are a few suggestions for projects which find a ready sale or prove a welcome gift: Desk pen sets, candle holders, paperweights, cigarette lighters, cigarette boxes, book ends, lamp bases, purse handles, umbrella handles, zipper pulls, figurines, magnifying glasses.

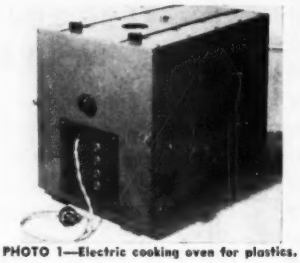


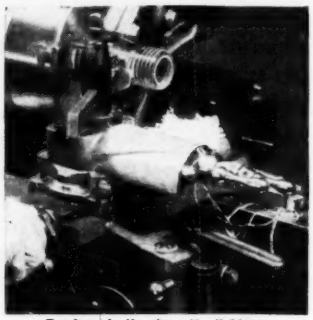
PHOTO 1—Electric cooking oven for plastics.

Liquid plastic is so versatile its uses are almost unlimited. It can be molded, sawed, carved, drilled, turned, cemented. Flowers, butterflies, medals, photographs, and other objects can be embedded in it while in its liquid state.

It is obtainable in liquid state in cans, at a reasonable price. Its lasting qualities are improved by storing the liquid plastic away from air and sunlight. Every manufacturer has his own formulas for mixing, but with each they are simple. Basically, all you do is pour the liquid plastic into a bowl and thoroly mix in the specified amount of catalyst (hardener). Pour this liquid mixture into a mold and heat at about 110° for a few minutes until it jells. Allow to cool to room temperature, then reheat to about 200° for approximately 30 minutes, according to its size and specifications. It is allowed to cool again. When removed from the mold you have a casting of gleaming solid plastic.

The liquid plastic can be kept at the required temperature by placing the mold in a pan of water heated to the correct temperature and kept at that temperature. When using this method of curing keep all water away from the plastic until after it has hardened, as the liquid plastic will turn white wherever the water touches it. The best method is to cure in an oven. Such an oven can be purchased inexpensively, or it can be made from wood and heated by 100-watt lamps. A homemade oven of this type is shown in Photo 1.

Any container which will hold water



Turning plastic cigarette lighter.

PHOTO 4—Cigarette lighter in clear and black plastic.

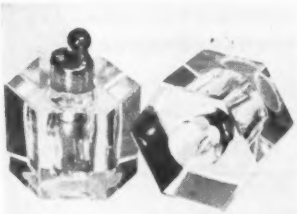


PHOTO 2 (Left)—Blue tinted clear plastic cigarette lighter.

PHOTO 3 (Above and right)—Glass clear plastic cigarette lighter.

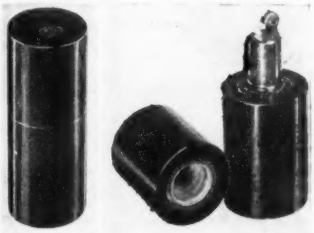
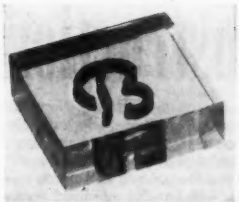


PHOTO 5—Cigarette lighter of red transparent plastic.



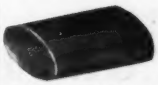


PHOTO 6 (Left and top) — Clear plastic with initial routed out on underside. Clear colored plastic bag pull.

PHOTO 7—(Right) Clear plastic with embedded initial.

PHOTO 8—Tinted transparent plastic paper weight with embedded flower.

PHOTO 9—Clear plastic with embedded medal.

PHOTO 10—Plastic mold and colored plastic casting.

PHOTO 11—Simple rubber molds.

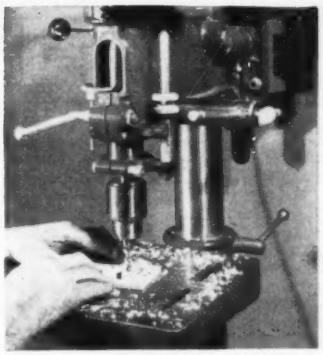
can be used as a mold—tea cups, tumblers, wine glasses, test tubes, cookie tins, etc. Even cardboard boxes may be used, since the plastic, being a thick viscous liquid, will not leak thru. The plastic shrinks slightly on cooling, so that removal is easy. Merely turn the mold upside down, tap the bottom of the mold, and the plastic cast drops out. It takes on the surface of the molds, so that a cast molded in a glass will be just as highly polished as the inside of the mold.

One of the essentials in casting plastics is cleanliness. Equipment and hands must be kept clean and free from dust. Equipment should be cleaned immediately after use, as once the plastic hardens it is difficult to remove, Wash equipment in hot soapy water.

Start with simple molds, such as test tubes or tea cups. Having mastered the fundamentals, you can go to more complicated forms, using split plaster molds. Or you can make your own flexible rubber molds. The rubber molds are probably the easiest to make—and in most cases the best, as they are flexible enough to cast figurines with deep undercuts, and can be used over and over again.

To make a rubber mold, liquid latex plus a few drops of water are mixed with a vulcanizing material which sets in about 30 minutes and cures overnight. Glove molds can be made by dipping the original object in liquid latex several times until a sufficient thickness of rubber has been built up. When dry this mold is peeled off like a glove, both from the original object and from the cast.

The crystal clear plastics are favorites for true beauty and for embedding flowers, butterflies, etc. These can be tinted or colored by the addition of a few drops of special dye. The opaque plastics can be cast in their natural ivory color, or can be colored with dyes made particularly for this plastic. As a rule, the opaque plastics shrink less than the transparent ones, so that when using solid molds, the inside of the mold should be glazed with a mold-easing compound to facilitate removal of the cast.



Routing plastic.

For a few specific examples of casting you are referred to the accompanying photographs. Photo 2 illustrates a cigarette lighter made from clear blue tinted plastic. The liquid plastic was cast in a metal tube of the required diameter and afterwards was drilled for the accommodation of the metal cigarette lighter. It was then turned to shape in the lathe, using a formed bit for the half round rings on the base. Best results are obtainable at fairly high speed, and by using a cutter bit with slightly negative top rake. The lighter shown in Photo 3 was cast in a rubber mold. The original shape was made in wood, and this was used to make the mold. It was made in one piece, the sides, top, bottom polished to a glass finish. It was then sawed apart and drilled for the metal lighter. The hole for the lower part of the metal lighter was made snug for a forced fit,—upper hole a few thousandths oversize for ease of removal.

Photo 4 shows a novel idea for a table cigarette lighter, the top being of clear plastic and the base of solid black. Both sections were cast in metal tubes and afterwards drilled and turned to shape. Polishing is done on a cotton buffing wheel, using buffing compound.

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PHOTO 12—Molded plastic figurines.

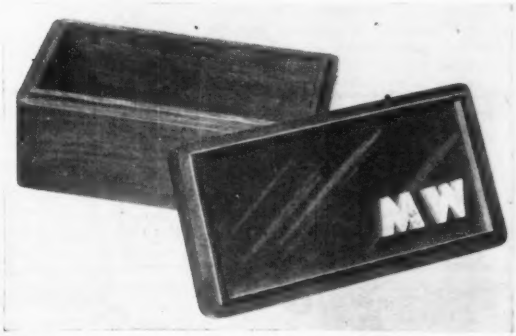


PHOTO 13—Walnut box, inlaid plastic lid with embedded plaster letters.

There is no mystery in STAIR construction

"Show-How" on Home Modernization

By FRANK CULHANE

Associate Editor

PART 2

IN Part 1, last issue, we described the methods used in designing safe and comfortable stairs, stock materials available in local lumber yards, method of finding the sizes of risers and treads. In that article as in this we are limiting ourselves to the design and construction of simple stairs by methods that are within the limits of skill and equipment of many of our readers.

Step 3—Laying Out the Stringer

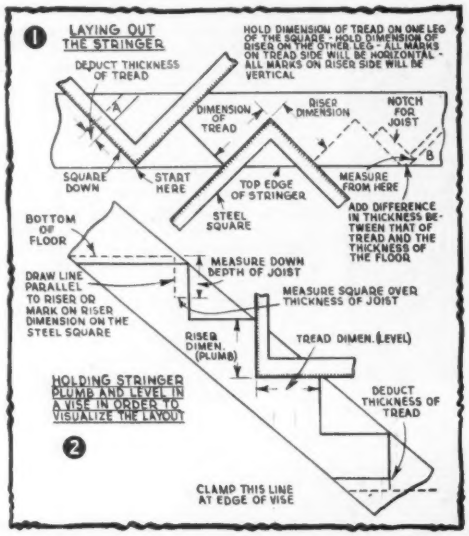
Laying out the stringer causes the most difficulty for inexperienced carpenters. Actually it is a simple job. There are only two parts of the layout that may require study. First, the deduction at the bottom of the stringer to allow for the thickness of the tread (A Fig. 1). Second, the allowances at the top of the stringer. Some of this confusion may be cleared up if you rotate the magazine page so that the illustration of the stringer (Fig. 1) is in its normal position in use. It is useful if you do this frequently as you read the instructions. The fact that the stringer is upside down during the layout may be confusing at first. Again, from long experience we urge that you provide yourself with a piece of plank or a strip of building paper and actually lay out the stringer step by step as you read the instructions. When you have laid out the stringer raise it so the risers and treads are plumb and level. If you have a vise, clamp the stringer with its bottom mark flush with bench (Fig. 2). This will help you to visualize better what you are doing.

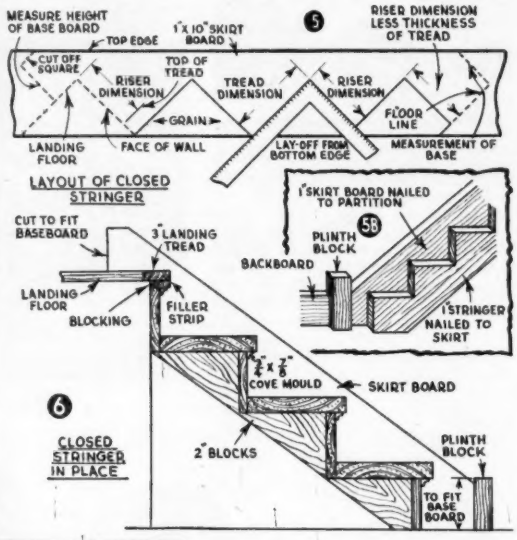
Place the stringer stock on the saw horses with its top toward you. Now lay the steel square on the stock with the riser dimension on one leg and the tread dimension on the other. Mark each leg (Fig. 1). Move the square and mark until you have laid out the required number of steps. Use a sharp pencil and be careful to place the square so that each step is the same size. Note that any mark on the riser side of the square will be vertical or plumb when the stringer is in place and all marks on the tread dimension will be horizontal or level.

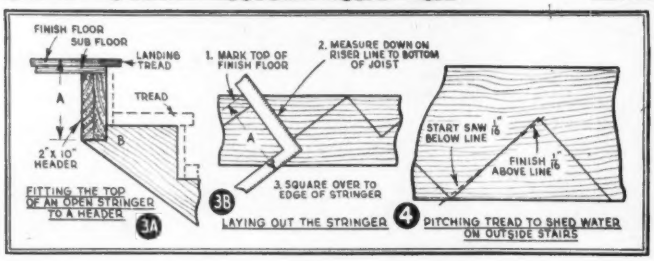
Lay out the bottom riser by holding one leg of the square on the first tread mark (Fig. 1) and squaring down by marking the other leg. Deduct the thickness of the tread stock from the riser dimension here. This is done so that all riser dimensions are the same size. In this case the dimension from the floor to the top of the tread will be the same as all other steps when the treads are in place. If this is confusing hold the stringer in its normal position and the reason will become apparent.

The effect of this deduction is to drop the whole layout the thickness of the stock in the tread. On most rough stairs this would be 1⅝". The thickness of flooring at the top landing for the stairs is 13/16". This means that our top mark is now 13/16" below the bottom of the floor (B Fig. 1). If our stringer is to be notched around a joist or if other measurements are to be made we must add the difference in thickness between that of the tread and of the floor above our original top mark.

This allowance is the second item that occasionally causes confusion. If this is not clear to you we repeat our advise that you clamp the stringer in position in your vise with the treads level. Now measure from the bench top and actually draw



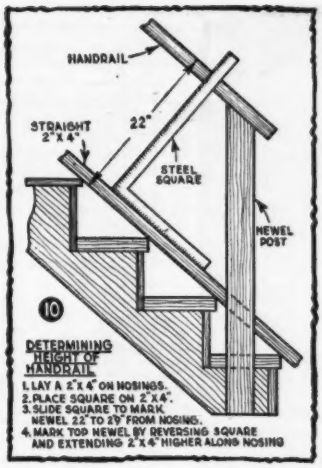


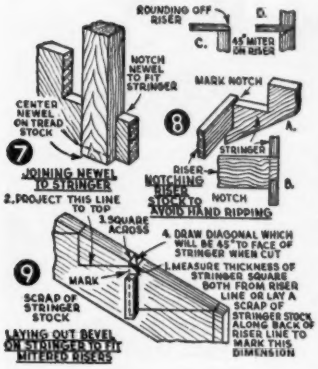


the joist notch in place. Inasmuch as all stringers are not framed around a joist the same method can be used to check any other top cuts (Fig. 3).

Treads on outside stairs must shed water to prevent seepage into the joints. Approximately ⅛" pitch on the tread will shed water unless they are badly warped. Too much pitch is uncomfortable and in icy weather it is dangerous. To make this pitch, lay out the steps as described above. When cutting start the saw below the tread line on the outside and finish the cut above the line at the inside. This will give approximately ⅛" pitch (Fig. 4).

There are two types of stringers. The one that fits against a wall is called a closed stringer. A stringer exposed in the room and cut to support the risers and treads is an open stringer. On finished mill made stairs the closed stringer is "housed" or "gained" with grooves ½" to ⅝" deep which support the risers and treads. This construction is too difficult for most home workmen.





There are a number of methods used by carpenters to provide a satisfactory substitute for the mill made closed stringer. We will describe only one method here. It provides a neat appearing stringer if it is made carefully.

Closed stringers are fastened to the face of the wall. If the stringer is placed before the walls are finished the stringer is blocked out from the studding to allow for plastering or wall board. An inexpensive type of closed stringer is built up by fastening 2" blocks to a 2" x 10" board (Fig. 5). The blocks can be the waste pieces from an open stringer, or they may be cut from 2" stock and fastened to 1" x 10" skirt board. The grain on the blocks should run parallel to the long side of the block (hypotenuse). It is advisable to use glue and nails if you are doing your own work. Cleats are sometimes used instead of blocks on cheap work.

Ordinary pine 1" x 10" is used on attic and basement stairs. It should be reasonably dry in order to avoid open joints thru shrinkage. Kiln dry stringers also are available in lumber yards in ¾" x 11" size. Kiln dried mill made treads (1-1/32" x 10½" and 11½") and risers (¾" x 7" and ¾" x 8") are available also.

Another type of closed stringer is made by cutting an open stringer from a 1" board (Fig. 5B). This stringer is then nailed to the 1" x 10" skirt board instead of the blocks mentioned before. The method used depends upon the materials you have available. Either method is satisfactory.

The layout of the closed wall stringer is made in the same manner we described before (Fig. 1), for the open type stringer with one exception. The layout for the closed stringer is made from the bottom edge of the stock (Fig. 5). After the layout is made it is checked with the opposite mate to be sure the marks are in line.

Fitting closed stringers at the top and bottom presents some difficulty for inexperienced workers. Fitting is simple if you remember that all marks on the riser dimension are plumb or vertical and all marks on the tread dimension are level when the steel square is applied to the stringer (Fig. 5). You can measure from these marks in the same way you can measure the plumb and level dimensions to which the stringer is to be fitted.

In the instance illustrated here (Fig. 6) the stairs are framed to a wall. The riser is fastened to the face of the wall at the top. The riser line on the stringer would fit the face of the wall. To find the cut to fit the landing floor we would measure up on the riser line and square over to mark the cut at the floor. The dimension from the top of the finished floor to the top of the tread would be the same as the riser dimension held on the square to lay out the stringer.

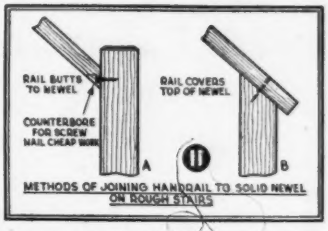
To lay out the end cut extend the line of the finished floor. Measure square up the height of the baseboard on the landing. Draw a plumb line by marking on the riser side of the square. Square back and cut off point as shown.

A very common method of making a joint between the stringer and the baseboards is to frame the stringer as shown and then place a "Plinth Block" (Fig. 6) between the stringer and the base. This eliminates the necessity of careful matching of the stringer and the baseboard especially the top member mouldings usually used on baseboards. The Plinth Block usually is 1" thick and equal in width to the width of the door casing.

EDITOR'S NOTE: In the next issue Mr. Culhane will go into detail on another home modernization project which frequently gives trouble —cabinet doors. Over a period of years he has developed several simplified procedures which you should find interesting and helpful.

Erecting Stairs

The stages in laying out and erecting stairs in their order are: 1. Determine the number and size of the risers. 2. Determine size of the treads. 3. Lay out stringer. 4. Cut and fit stringers. Hold stringer in place with temporary nailing. 5. Fit and nail risers. 6. Level stairs. 7. Nail stringer permanently. 8. Cut and erect newels. (The tread on home built stairs is notched around the newel) (Fig. 7). It is placed in the center of the tread stock and fastened with nails. 9. Cut and



place treads. Chamfer the top edges about ¼". The tread that is notched to fit around the newel is fitted carefully to prevent crowding the newel out of plumb. The tread usually is fastened with 3-20 d spikes. On home built stairs we advise using brass or galvanized screws. 10. Fit top hand rail (Fig. 10). Hand rails are fitted in two ways (Figs. 11 A & B). The framing shown at A has the advantage of better appearance and the disadvantage is the tendency of snow and rain to accumulate in the joint. The framing at B has the advantage that the end grain of the newel is covered and the rail sheds water; its disadvantage is its appearance. 11. When the top rail is fastened fit the lower rail. 12. Place balusters. 13. Lay finish floor on the landing. 14. Go over the entire stair to be sure that all the members are securely nailed and the stair is solid.

Riser stock is 1" x 8" (13/16 x 7⅝). Risers seldom come to this exact size. If a power saw is available it is a simple job to rip the stock to exact size. Hand ripping, however, is a tedious job. Carpenters have a simple method of fitting risers when the stock is too wide. They lay the riser in place upside down on the stringer (Fig. 8A). Then they mark along the top edge of the stringer to mark the width of the riser. When the riser is notched and put back in place the notch allows the riser to drop until its top edge aligns with the cut on the stringer (Fig. 8B).

The appearance of the end grain on the risers is objectionable, especially on inside stairs. Rounding off the part of the riser above the tread helps to improve the appearance of the stair (Fig. 8C).

Riser ends frequently are mitered at 45° to avoid end grain (Fig. 8D). Mitering is

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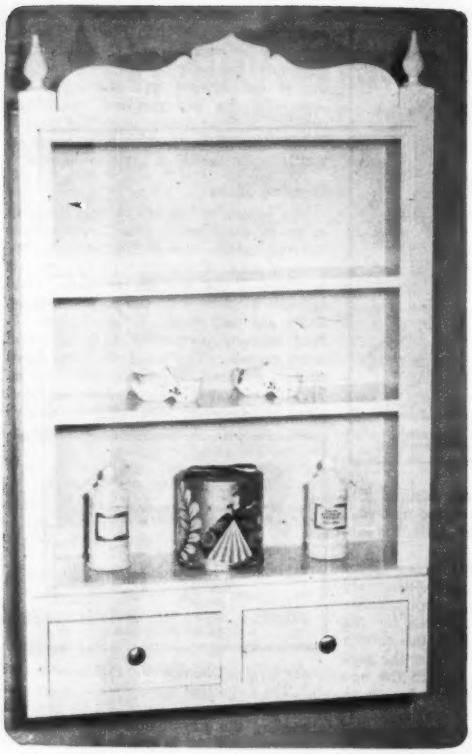
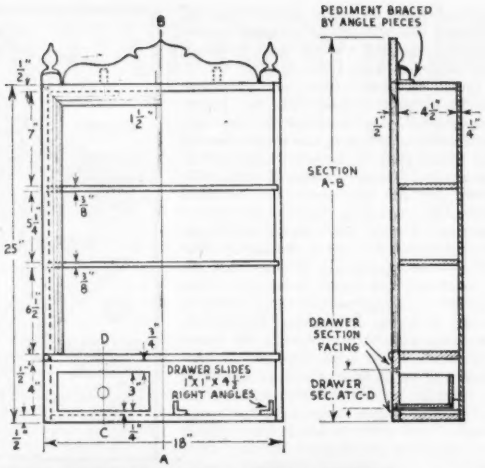
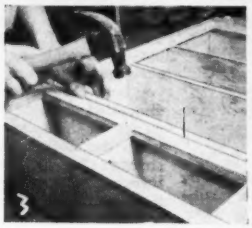
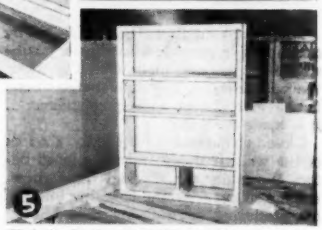








Colonial WALL CABINET

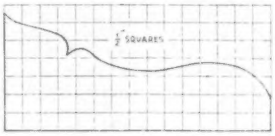
By ALLEN C. HAMILTON

THIS charming bedroom wall cabinet provides additional shelf space for powder boxes and those miscellaneous cream and cologne bottles always crowding the dresser top. Has two handy drawers for lipsticks, compacts, and various trinkets.

Note that the sides are rabbeted $\frac{3}{8}$"x$\frac{1}{4}$" deep for the first and second shelves, and $\frac{1}{2}$" for the third shelf. The frame is nailed and glued together, setting the shelves in glue in side grooves and fastening with small finishing nails from the outside. The top and bottom are fastened in the same manner, except that they form plain butt joints with the sides. Frame should be squared up as it is assembled.

Nail and glue the backing panel in place, using $\frac{1}{2}$" or $\frac{5}{8}$" brads. Countersink all nail heads around the sides; fill with Plastic Wood. Sandpaper the whole frame after filler has set.

About six feet of moulding, $1\frac{1}{2}$" wide, is required for trimming that part of the frame above the drawer compartment.



PEDIMENT OUTLINE

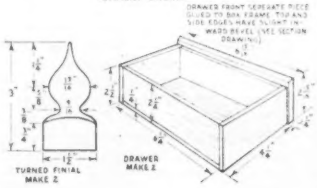


Photo 1—Laying out pediment outline on stock from paper pattern.

Photo 2—Turned finials are glued and nailed to cabinet. Pre-drill the base of finial for nails. Countersink nail heads and fill before painting.

Photo 3—Half-round moulding strip is fastened in place with brads.

Photo 4—Pediment is secured to cabinet by two metal angle pieces.

Photo 5—Assembled box frame. Note right angle drawer strips glued in place.

Moulding similar to that shown in the drawing can be obtained at local lumber yards if the worker does not have equipment for making his own trim. A careful mitering job is essential in assembling moulding on frame. When cutting moulding to length, allow a fraction extra material, mitering the joint ends to exact length on a sanding disc.

Note that drawers slide on two right angle strips glued to bottom of drawer compartment. These strips should be

BILL OF MATERIALS

The following finished material, which may be plywood or solid stock, is required for the cabinet frame:

Item	No.	W.	L.	T.
Sides	2	4½"	25"	¾"
Top & bottom	2	4½"	17"	¾"
Shelves	2	4½"	17½"	⅜"
3rd shelf	1	4½"	17½"	½"
Backing panel	1	18"	25"	

(Plywood or composition, ⅛" to ¼" thick)

spaced to allow easy movement of drawers.

Drawer compartment facing is of ½" stock. It can be made from a single piece of plywood, with 3"x7" openings cut out for the drawers; or it may be assembled from separate strips of ½" stock. A piece of ½"x18" half round, beveled at the ends, is fastened across the top of the drawer compartment flush with the surface of lower shelf, to complete the trim.

The pediment mounted at the top is cut out on the band saw from ½" plywood or clear pine. First, make a full size cardboard pattern from the graph outline given in the working drawings. After band sawing to shape work the edge with sandpaper to a smooth, graceful contour. The pediment is mounted flush with the face of the moulded trim and is secured to the top by two angle brackets.

The finials mounted at the top corners are turned from 1½" finished stock, and are glued and nailed to the cabinet.

The small drawers are assembled as a box, the drawer front added as a separate piece after it has been fitted to the drawer opening. Using this method, the entire drawer may be built from ¼" stock. Drawer fronts have a slight inward bevel on top and sides. (See drawing for dimensions—construction.)

Next, sand the assembled cabinet carefully, filling and smoothing any cracks and dents occasioned by assembling. Be sure all nails are countersunk and the holes are filled.

The cabinet illustrated was Enamel white on outside and peach for interior. Three coats of finish were used, as follows:

(1) Enamel undercoat. Sand with 2/0 sandpaper. (2) First coat of enamel. Use 4-hour enamel. Sand with 3/0 paper. (3) Apply final coat of enamel.

"Say, that's the cat's . . ."

JIG SAWED HOUSE NUMBERS

By CARL SORENSEN

Photo 1—Mounted just outside an entrance, this house number cat gives visitors a cheery welcome.
Photo 2—The cat may be used as a lawn ornament or may be perched atop a fence or gate.

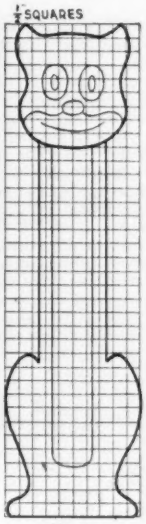


Fig. 3.

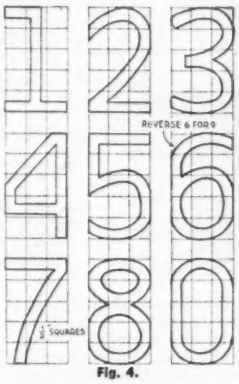


Fig. 4.

Photo 5—Patterns for the numbers are placed on the cat's body and a pencil line run around them.

Photo 6—Cutting the numbers to shape on the jig saw.

Photo 7—After the numbers have been cut out, the cat's body is jig sawed to shape as pictured above.

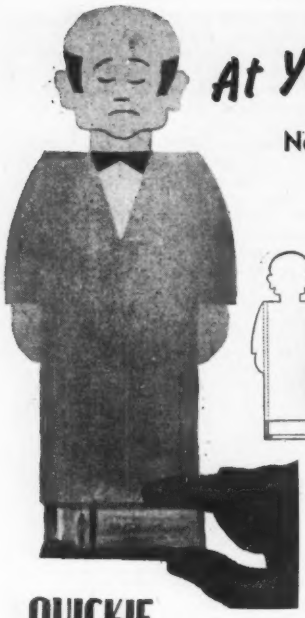
MOUNTED on top of a fence or gate, used as a lawn ornament, or perched just outside the front door, this jig sawed cat will dispense chuckles as well as address information.

Enlarge the pattern for the cat to the proper size by means of the squares, as in Fig. 3. A set of numbers is presented in Fig. 4. Make full-size patterns of the numbers in your address and cut to shape with a pair of shears.

Transfer the pattern for the cat to a piece of close-grained stock ¾" or so in thickness. Lay your paper number patterns in place on the cat's body (Photo 5) and run a pencil line around them. The spacing of the numbers will depend on whether your address consists of two, three or four numbers.

Now the numbers may be cut out on the jig saw, as pictured in Photo 6. The cat's body is sawed to shape as in Photo 7. The original cat was finished in black, with a pink nose and pale green eyes with black dots. Alter the color scheme to your individual taste.

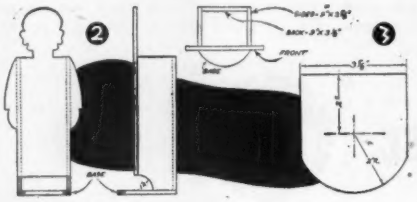
The cat may be mounted by drilling a hole in the bottom of the body to accept a short piece of ⅜" dowel. Glue the dowel in place in the cat's base; fit the projecting end into a similar hole in the spot you choose for the roost.

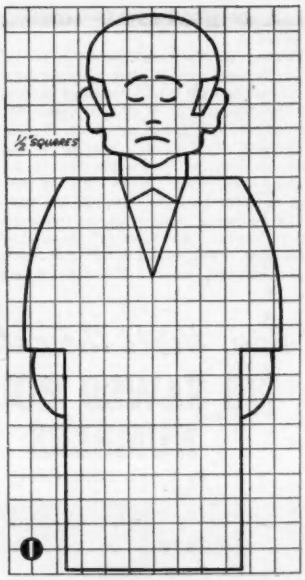


At Your Service, Sir!

Novel Rack Holds Carton of Cigarettes

By CARL SORENSEN





QUICKIE *Project*

WHERE to keep a whole carton of cigarettes? This perky holder solves the problem in neat and amusing fashion. Shaped like a "Gentleman's gentleman", the rack holds ten packs and serves them one at a time. It also reminds the smoker that it's time to buy more when he pulls the last pack out and "there ain't no more cigarettes".

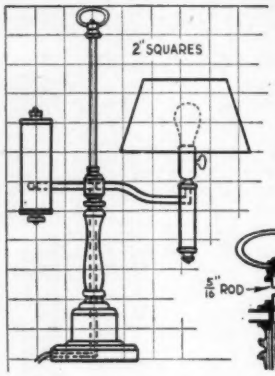
¼" plywood is used for the entire novelty. Enlarge the pattern for the figure (Fig. 1) to the proper size by means of the squares, transfer to the wood and jig saw to shape. Make the sides, back and base to the dimensions shown in Figs. 2 and 3. Assemble the pieces with glue and brads, letting Fig. 2 serve as a guide, and you're ready for finishing.

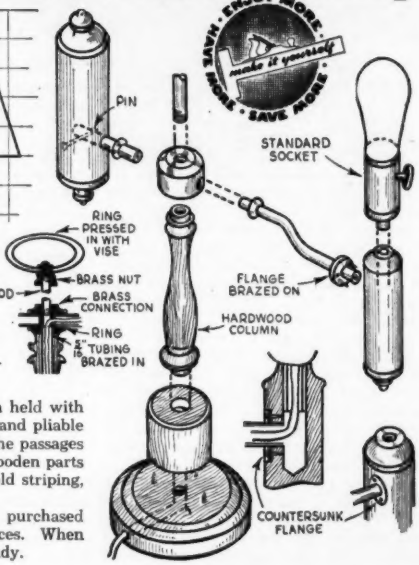
After sanding thoroly, sketch in facial and other details with a pencil. Apply a coat of shellac over the entire rack. The shellac will seal the wood, so that one coat of enamel will cover; and the pencil lines will be visible thru it as a guide while painting. Finish with quick-drying enamels in whatever colors you prefer to use.

The face and hands on the original were painted flesh color. Hair and facial details were added with black. The base was painted black to resemble shoes, while the suit was blue. A white shirt and red tie completed the job.

Tack a couple of picture hangers to the back for hanging. The cigarettes are dropped in from the top, one on top of the other, and are removed from the bottom as illustrated.

Wood-and-Brass Student Lamp

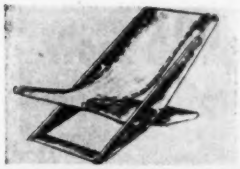




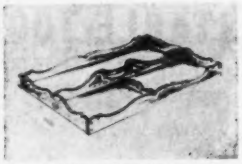
HI SIBLEY says this is an easy lathe project. The base, column, dummy oil tanket and socket holder are turned from hardwood; the nut with four-outlet connection is made of brass.

Arms are brass tubing brazed into the connection. The tank is secured to one with a pin. For the socket holder a flange is brazed to the tubing and set in a counterbore in the wood, then held with two short brads. Select a soft and pliable light cord and thread it thru the passages during assembly. Finish the wooden parts with an azure lacquer with gold striping, and buff the brass.

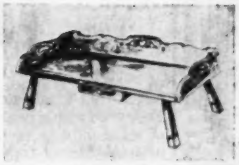
A suitable shade may be purchased from any of the usual sources. When finished it should please mi-lady.



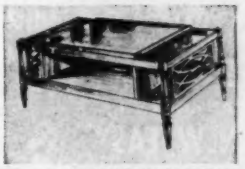
No. 35: RECLINING LAWN CHAIR. Plan sheet measures 34" x 47". Simply constructed of wood and canvas. Ideal for sunbathing and lounging.



No. 20: HOSTESS TRAY. Plan sheet measures 22" x 22". Can be made of solid maple or plywood, having divided sections for serving hors d'oeuvres or small sandwiches.



No. 23: WAGON SEAT COFFEE TABLE. Plan sheet measures 26" x 42". Quaint Early American design for room done in maple. Charming addition to a living room.



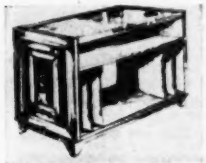
No. 27: SHERATON COCKTAIL TABLE. Plan sheet measures 34" x 37". The gracious proportions embody all the elements of craftsmanship. Mahogany is the wood suggested.

No. 25: CHIPPENDALE CHEST. Plan sheet measures 36" x38". Beautiful eighteenth century design. Mahogany suggested, with antique brass hardware.

No. 11: COLONIAL KNITTING BOWL TABLE. Plan sheet measures 23" x 43". As this is an Early American piece, it is suggested a good grade of maple be used.

No. 19: HOBBY SHELF. Plan sheet measures 20" x 24". A good place to display a collection of china figurines. Adaptation of an Early American design calling for maple wood.

No. 33: MODERN WOOD CHAIR. Plan sheet measures 34" x 34". Design of striking simplicity. Will add character and a functional quality to the living room or porch.



No. 15: END TABLE-RECORD CABINET. Plan sheet measures 47" x 36". Combines functional and utilitarian elements which will please most modern-minded of today's craftsmen.

No. 14: COLONIAL CHAIR-SIDE TABLE. Plan sheet measures 48" x 29". Adapted from an Early American original. Recommend maple with an antique finish.

No. 32: MODERN LAMP TABLE. Plan sheet measures 28" x 42". Simplicity of design and construction will please modern-minded craftsmen. Has enough pattern work to make interesting project and attractive piece.

No. 21: CIGARETTE TABLE. Plan sheet measures 18" x 37". A useful little table for serving, for tea time, etc. Mahogany is suggested.

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No. 16: SHERATON TIER TABLE. Plan sheet measures 27" x 41". A beautifully proportioned piece. Mahogany recommended. Will add grace and charm to any living room.

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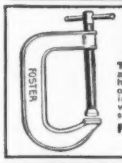

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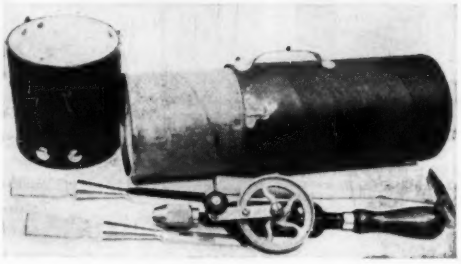
HANDICRAFT CATALOG

PORTABLE TOOL BOX

By SIMON S. PALESTRANT



NOT SO long ago, I received a shipment of some liquids sent in a cylindrical container. This container struck me as being of unusual toughness & durability. Upon closer examination, I recognized it to be the shipping tube used by the U.S. Government to transport the 105 M.M. Howitzer shells, container #M130. Upon additional investigation, I found that these are purchasable at most any government surplus supply store at a ridiculously low price.

I immediately proceeded to transform this container into a very much needed portable tool case.

First I riveted a 5" nickel plated kitchen drawer pull-handle. A 5" x 1" x ⅛" strap was lined up with the handles inside the tube before it was diveted. This helped to relieve the strain at the riveted points & made the handle immeasurably firmer & stronger. The container measured 15½ inches long by 5 inches in diameter, therefore the handle was placed at exactly the center of its length for proper balance.

Two nickel plated suitcase bolts with flush hasps were then riveted at the meeting points of the cover & the container base. These were set about two inches on either side of the handle line. They were then riveted with wide-head aluminum rivets & backed with washers on the inside. The male half, attached to the cover section, had to have the rivet heads applied from the inside in order to prevent undue wear on the container lip as the box was opened & closed. These rivet-heads acted as slides.

Directly opposite the line of the handle & straddling the bottom ridge, I fastened six chair glides or slide domes. These were so placed that they raised the cylinder to a point where it no longer touched its resting level & at the same time, kept the container from rolling over. Four of these gliders were placed along the larger base section of the container, two along the cover part.

Since the end pieces that closed the container were made of ridge-stamped metal, it was necessary to cover the inside of each with a disc of corrugated board, backed by a thin layer of cotton waste. This prevented tools from setting up a constant rattle & clamor when carrying them about.

To finish the box properly, it was necessary to dress it up in paint. Several coats of red lead, followed with a bright red enamel then the ends painted black, made an excellent contrast to the nickel plated hardware.

A real Class A finish was what I finally achieved by first priming the box with white lead, then painting it with a thick coat of Sama crystaline paint. The ends achieved a very high gloss when they were covered with stove enamel. All this might have been done before the nickel-plated hardware had been attached. However, with a modicum of care, a clean job may be achieved successfully, even after the shiny hardware has been fastened on.

It made a very beautiful & thoroly efficient tool case. I elicited many a favorable comment during its many trips about.

STOCK BILL

105 MM. Howitzer container—M. 130
1—5" kitchen drawer pull-handle
2—1⅞ x 1½" suitcase bolts
6—chair-leg ¾" slides
12—⅛ x ⅛" D. alum. rivets ⅜" heads
6—½ x ⅛" washers
1—5 x ⅛" strap

Whittling and Woodcarving

★ *Totem-pole carving in Alaska and the Northwest, wood sculpture embellished with painting, represents some of the finest art work ever developed by any American Indian. This has curious stylization all its own recording notable events, family crests, history, mythical geneology and so on.*

★ *Butternut is a very useful hand wood for intricate carving.*

★ *The carver's skew-edged blade may be in the pocketknife or a separate fixed-handle type called a sloyd knife. Ground off at a long angle to produce a very long slender point this serves for all delicate cutting.*

★ *Much woodcarving involves three dimensions, length, breadth and depth, the free use of the latter necessitating greater care in the choice of the block of wood. It must be thoroughly seasoned, free of knots, large enough to cut down to the desired shape, have a fine easy-cutting and relatively-straight grain.—Morris A. Hall*

Woodworkers' Information Department

By FRANK HEGEMEYER, Associate Editor

Do you have any particular woodworking or power tool problems? Tell us your problems and we will do our level best to answer your questions fully and promptly. Please address your questions to Frank Hegemeyer and enclose a stamped reply envelope.

Q. Some time ago I made a pair of paneled cupboard doors in which the corner joints of the framework opened up. ¼" plywood was used for the paneling and I took particular care in making the joints. Can you tell me what caused these to come apart?

LANCE MILLS
Hoboken, N. J.

A. Assuming that these joints were properly fitted and glued the only reason I can see which could have caused this was in not providing for the inevitable expansion and contraction of the plywood material during climatic changes. In paneled door construction, the panels should fit snugly but not too tightly in the frame grooves with about 1/32" clearance on all four sides between its edges and the bottoms of the grooves. Glue never should be used on the panel or in the grooves.

✦

Q. My band saw blade is inclined to "run off" from the cutting line. What makes it do this?

L. D. THOMPSON
Peoria, Ill.

A. This generally is caused by the teeth on one side acquiring a premature dullness. If not too severe, it is corrected easily by side-jointing the teeth on the same side to which the blade is inclined to run off. Side-jointing is done by holding a sharpening stone lightly against the teeth while the blade is in motion. The stone should not touch the teeth for more than a second at a time. Trial cuts are made (preferably in plywood) until the blade follows a straight line indicating equalized cutting on both sides. If this does not help it is advisable to take the blade out for reconditioning.

✦

Q. I want to make a pair of half-turnings to be used as surface decorations on the front of a television cabinet. I have tried cutting a turning in half but found this method unsatisfactory. Could you advise me of a better way?

THOMAS McCARTHY
San Diego, Calif.

A. Yes. By the "split-turning" process you can make identical half-turnings on your lathe in one operation. Simply sandwich a strip of newspaper between two pieces of glued-up stock which forms the turning square. Glue is applied to both members and a screw inserted at both ends to keep the work from coming apart. After the turning is completed the work is separated with an ordinary table knife or other fairly thin tool. The paper is loosened with a water-soaked cloth and then scraped away.

Q. In your department article appearing in the September-October issue you suggest the use of a support when cutting wide thin stock on a bandsaw. Just what kind of support is best for this?

LEON CONKRIGHT
Nashville, Tenn.

A. The accompanying photograph illustrates a simple jig to support the work at a true vertical while cutting. It is clamped to the table. The edge of the support, against which the work slides, is V-shaped. The jig is positioned on the table so that the point of the "V," which

acts as a pivot point, is even with the teeth of the blade. This allows the work to be swung sideways to follow the cutting line. If a circular saw is available slit both edges of the stock as deep as the blade allows and then make the final separating cut on the bandsaw.

✦

Q. Is there a saw especially for making dovetail joints. I have been using a back saw for this purpose but it seems to me this particular saw is not just the right one for such work.

ROBERT RITCHIE
Old Lyme, Conn.

A. You are right. A back saw is not intended for making dovetail joints. As the name implies, a "dovetail" saw, was designed especially for this work. The blade is thinner and narrower and has a great number of teeth per inch than the back saw. This results in smoother cuts and with the straight handle permits better control of the tool. These saws come in 10" or 12" blade lengths.

✦

Q. I am having trouble in hand-planing the edges of boards which are to be glued together. It seems that one or the other of the boards has a slightly beveled edge causing the boards to have other than a true flat surface after they are glued together. Can you tell me how to

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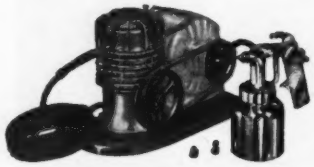

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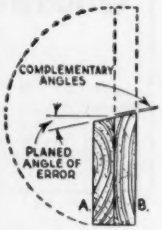
remedy this?

A. STERN
Tuscon, Ariz.

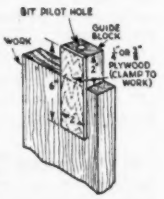


A. Your difficulty is understandable if the boards are planed individually. By referring to the sketch, the boards to be glued are clamped together in the vise and planed as one. In this way the planed angle of error, as shown, is of little consequence when the boards are to be joined. By swinging board "A" on top of board "B" the angle of error is transformed into complementary angles resulting in a perfect-fitting joint to bring the sides of the boards in a true flat plane. This manner of joint fitting should be done with a jointer plane which has a straight-edge cutter.

✦

Q. Have you any suggestions in the way of a jig which would enable me to bore holes at a true straight angle into the end grains of stock? Not having a drill press I must do this work with hand tools.

MARSHALL LaCOUR
Teaneck, N. J.



A. The jig shown in the accompanying drawing should be of some help. The trueness of the holes depend upon the accuracy with which the bit pilot hole is made in the guide block. Several holes may be made in this block to accommodate different size bits.

✦

Q. What techniques would help me produce smoother cuts in shaping operations on a drill press? And why do I seem to end up with torn corners on the work?

H. NEWHOUSE
Saugerties, N. Y.

A. The first requisites to clean shaping cuts are keen edges and high speed. The work must be fed in proportion to the speed of the cutters. The slower the feed, the smoother the cut. As to your difficulties with torn corners, it appears to me that you are making the first cut with the grain. This invariably results in torn corners on the end grain at the finish of the final cut. By starting the first cut against the grain any torn corners which are not too severe are removed along with the material taken from the following cut made with the grain on the adjoining edge.

✦

Q. Is there some simple way in which furniture drawers may be made to slide more easily other than by using wax or paraffin?

FRED FULLMER

A. You might try putting nickel-plated thumb tacks on top of the front rail at each end for the drawer sides to ride on and also on top of the drawer toward the back where it touches the guides.

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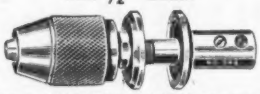

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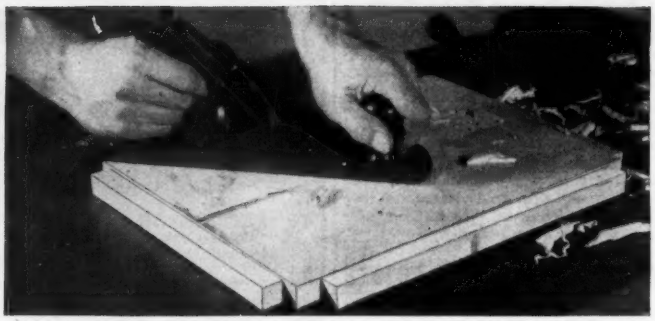

PHOTO 1—A jack plane is best for the "roughing off" cuts when surfacing material. Hardwoods should be worked in from the edges, using light cuts to prevent tearing the work. Best results are obtained if the bench top has a true flat surface.

Surfacing Hints for the Woodworker

Reducing stock thicknesses and leveling off uneven surfaces are easy. Here's How

By FRANK HEGEMEYER

A WOODWORKING project sometimes calls for stock having a thickness less than the material on hand. Reducing the thickness of stock is a simple matter with special machines intended for such work but most of us have to do the work with the equipment on hand.

"Hand-planing" (Photo 1) presents no great problem in thinning stock providing a few techniques are understood and reasonable care is taken. As shown here, 3/4" stock is being reduced to 5/8". By "fencing in" the work on all four sides with 5/8" high wood strips the work is not only kept from shifting but the strips serve as a guide in the amount of material removed over the entire surface.

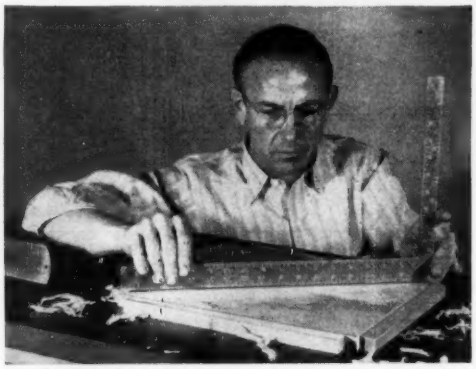

PHOTO 2—As the material is removed the surface should be checked frequently lengthwise, cresswise and diagonally with a steel square or straight-edge.

If you do not wish to mutilate your bench top with nail holes you can fasten the strips to heavy plywood which in turn can be clamped to any level surface. As shown in Photo 2, the surface should be checked frequently as the work progresses. Pine woods are planed best with the grain. The hardwoods, maple, birch, walnut or other coarse-grained material, should be planed across the grain or at a diagonal. The plane marks on hardwoods are removed with a cabinet scraper and then sanded. Pine need only be sanded or finished in light cuts with a jointer plane. This same set-up may be employed in removing high corners of the stock caused by a warp or twist in the board. The work is kept from rocking by placing shims under the raised corners.

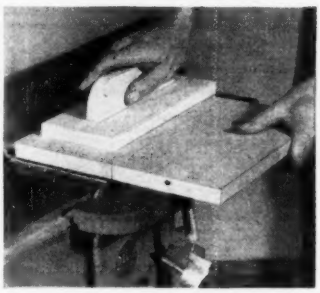

PHOTO 3—A jointer machine can be utilized for surfacing stock having a width twice as great as the capacity which the machine will make in a single cut. Note center line marked on the edge of the stock. The fence is adjusted to bring this line even with the outer edges of the knives. Light cuts should be made so that the surface may be made as the work progresses.

Most home workshop jointers are designated as a 4" or 6" denoting the width of a cut which can be made in one single operation. Actually, you can double its capacity by surfacing one half of the board and then turning it around and dressing the other half. There are two important points to remember when surfacing stock in this manner. First, the knives must be set in the cutter head on

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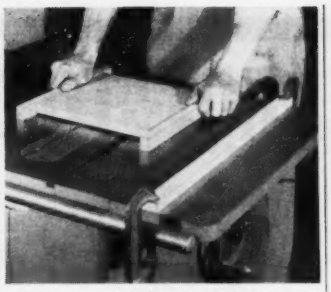

PHOTO 4—In a pinch, your circular saw can serve as a surfacer on small dimensional stock. The fence and a wood strip clamped to the table limit the side movement of the material. The raised edges of the side supports provide a finger-grip to hold the work. The supports should be a trifle wider than the table slots.

a true level with the tables. Second, the work should be kept in firm contact with the table the full length of the cut and the pressure equalized at both ends of the knives. A hold-down, or mitten (Photo 3) is recommended for such work in which its width should be fairly close to the length of the knives.

For want of a better method, you can surface stock on your circular saw with a standard equipped blade as shown in Photo 4. While this method is not as efficient, nevertheless the boards can be finished to a fairly smooth surface or warped boards leveled off on both sides to a uniform thickness. A hollow-ground blade, with the teeth flat on the top, produces a smoother surface than the standard rip or cross-cut blades. Dado heads, straight-edged moulding cutters and the like also may be used for this work. The stock is surfaced gradually by raising the blade or other cutting tool to take off not more than 1/32" of material with each cut. The work is moved slowly from side to side and advanced forward about 3/16" at a time. When attaching the support strips or surfacing guides to the work make certain the holding nails are so placed to eliminate any danger of the cutting tool striking them.

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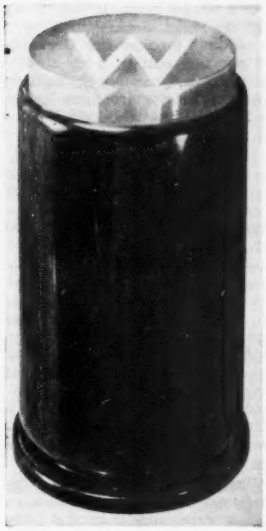


PHOTO 14—Box with transparent plastic lid and embedded plaster initial.

PHOTO 15—Box with clear rose tinted plastic lid and embedded metal initials.

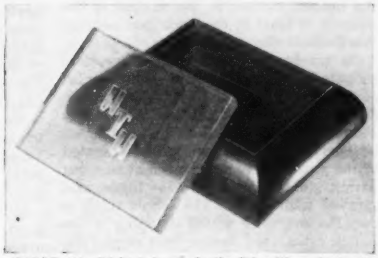


PHOTO 16—Walnut box, plastic lid with embedded initials.

Liquid Plastic

(*Continued from page* 175)

Photo 5 illustrates a simple but handsome lighter in brilliant red transparent plastic. This, too, was cast in an aluminum tube, polished, sawed in two, drilled, and given a final polish.

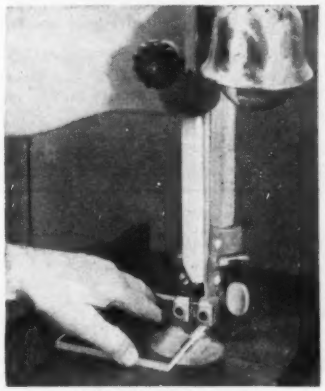
Photos 6 and 7 show clear plastic shapes with embedded plastic initials forming personalized paper weights.

Photo 8 shows a flower embedded in clear plastic which was cast in a tea cup. Embedding flowers take extra care, as first the flower must be free of external dampness; and second, heat must be kept to a minimum to avoid fading the colors of the flower. The operation is a double one. First, enough liquid plastic is poured into the cup to fill it one-third full. This is partly cured until it begins to jell. The flower then is pressed into place in the jelled plastic and sufficient liquid plastic poured in from one side to fully cover the flower. Any bubbles which adhere to the flower can be removed with a fine sharp needle. The cast is now cured slowly at about 105° until thoroughly jelled—use regular procedure.

In Photo 9 a war medal is embedded in crystal clear plastic. It has been found that some of the colors in war ribbons are affected by the acid of the catalyst, so before attempting to embed the ribbon, test out a small piece to see if discoloration is likely to occur.

Photo 10 shows a mold made by routing the initial in a piece of ¼" thick plastic. The initial was cast in brilliant red transparent plastic. Such initials would prove acceptable as gifts if a pin is attached to the underside either by casting it in, or by screwing on after casting. Three simple rubber molds are shown in Photo 11.

In Photo 12 are two figurines which were cast in split rubber molds. These were cast in solid plastic, the one on the left remaining in its natural unglazed ivory finish as it came from the mold.



Band sawing plastic square.

The figurine on the right was glazed with blue-green after curing.

Photos 13, 14, 15 and 16 are of cigarette and jewelry boxes made of walnut, lids made entirely of plastic or of plastic and wood—with metal or plaster initials embedded in the tinted clear plastic.

A new addition to the plastic field is a liquid plastic and catalyst which needs no heat to cure. This cuts equipment required to a minimum. However, this type of plastic does require slightly more curing time. There also are plastic materials which are supplied in powder form and require no catalyst. Water only is added, and the curing is either with or without heat—opaque plastics only.

A good way to make polished sheets of any thickness with any of the plastic materials referred, is to make a box of glass of desired size and thickness and cast the plastic in this, as the plastic takes on the surface of the cast. This glass box can be held together with Scotch tape. The resultant cast will be a sheet of plastic with a gleaming, glasslike surface requiring no polishing.

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You are invited to send your inquiries on home repair problems—interior and exterior, as well as on items used in the home. They may concern construction, heating, wiring, plumbing, painting, etc., and may involve wood, metal, leather, plastic, glass or any other material. All inquiries will be answered as promptly as possible, either in this column or by personal letter. Be sure to enclose addressed stamped envelope when writing to Mr. Graffam.

FIX IT YOURSELF

FOR FUN • FOR PROFIT • FOR ECONOMY

By PERRY S. GRAFFAM
Associate editor

Q. I am interested in doing some flock work. Where can I buy the material and just how is it done?

A. DonJer Products Co., 1115 Sterling Place, Brooklyn, N.Y., and Coast Industries, 1008K S. Los Angeles St., Los Angeles 15, Calif., both carry complete lines of flock craft materials.

Flock finish is produced by spraying or sifting flock, which is the name given to pulverized and shredded wool, silk or rayon, onto a varnished surface to which the fibers adhere, producing a velvety-soft cloth-like surface. The article to be thus finished is given a coat of tacky base varnish or binder. The flock is then applied immediately. After the work has dried thoroughly the flock is brushed up to remove any loose particles and to set the nap.

The flock can be applied by sifting with an ordinary flour sifter. This method does not produce as nice a coating as shooting the flock on under pressure, but it gives a satisfactory finish. Flock guns for applying flock can be purchased at either of the above mentioned firms. A design can be flocked onto an article such as a lamp shade by brushing the design with the binder, tracing to the outline of the pattern. A blast of the flock gun adheres the flock to the design.

On production work, paper or metal stencils can be used to confine the varnish or binder to the pattern, after which flocking brings out the design. Where only a single piece is to be done the design can be drawn on tracing paper, then cemented to the work with rubber cement, cut out with a stencil, knife or razor blade, and sprayed with binder. The whole thing is then flocked, after which stripping of the stencil reveals the design. Best results are obtained if the binder is the same color as the flock. The binder can be purchased in any color ready-mixed; but any flexible, tacky varnish will give good results.

Q. I have just acquired a large, black walnut tree trunk and would like some information on an inexpensive method of curing it at home.

A. Green wood can be seasoned by combining outdoor air seasoning with drying in a heated room. If fast drying is desired the wood should be cut up to the size required for final use. Drying in a larger size and cutting it up after it has seasoned will take more drying time and seasoning defects are more apt to develop. Bark will retard the drying rate and may cause a decay hazard if the wood is slow dried.

Wood loses moisture rapidly thru the ends, and therefore should be end-coated with a water-resistant coating as soon as possible after cutting. The wood should be piled to allow a free circulation of air thru and beneath the pile. The initial drying can take place in a shed or in an unheated room. Wood to be used for furniture should be dried to a moisture of 20% and then repiled in a heated room. The simplest way to find out if the wood has reached the lowest moisture content is by weighing a sample board. The lumber should remain in a heated room (about 20° F. above the outside temperature) until dry enough for use. The time will vary for large thick pieces.

If you desire to dry your wood in log form there are many disadvantages to overcome. It dries slowly in this form especially thru the bark. It is almost impossible to season logs without decay and checking, both surface and end. These checks are caused not only by normal drying stresses but due to the fact that the log shrinks twice as much around its circumference as along the radius. During the summer months checking can be retarded by applying a moisture-resistant coating to all freshly cut surfaces. Bark retards drying and checking. Therefore,

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if the bark is removed the log should be entirely covered with a moisture-resistant coating.

Q. A Florida reader writes to inquire about crackle finishes.

A. The unusual mixture that is required for making a crackle finish is a specially prepared material which is used for crackle coats and nothing else. The enamel glazing method produces an effect more like an enamel or varnish crackle finish sometimes found on real old furniture. Crackle enamel coatings should be applied with a spray gun.

The crackle effects produced may vary considerably with the amonut of reducer which is placed in the crackle enamel. This is the procedure for crackle finish with shellac, crackle enamel and glazing colors: Smooth all surfaces with sandpaper, then fill with a paste filler if a porous wood is being finished. When dry, sandpaper very lightly and dust carefully. Apply a coat of full-strength white shellac and allow 24 hours for drying. Now sandpaper lightly with 6/0 or 8/0 sandpaper and dust just before applying the next coat which should be full-strength white shellac. Allow an overnight drying, then sand lightly, wipe and dust. A special crackle finish is brushed on just as varnish is applied over the shellac.

The crackle coat should be allowed considerable time to change into a crackle effect by breaking up into various designs. After crackling stops and the finish becomes hard, the coating should be washed off with clean water. Color may be introduced now by applying glazing colors which will increase the contrast and make the effect more striking. The glazing colors selected might be a mixture of equal parts of burnt sienna and burnt umber with Van Dyke brown in the same proportion or less. Lamp black in small amounts is sometimes substituted for Van Dyke brown. If a more reddish tone is desired more burnt sienna should be used. The glazing coat should dry 24 hours. The crackle finish when thoroly dry (24 hours or more) should have a protective coating such as a flat or dull varnish.

Q. I am interested in making a modern coffee table, end tables and similar pieces of modern furniture using solid mahogany. I would like to obtain a bleached mahogany finish. Can you suggest a source of ideas or plans for the above pieces of furniture and also a means of obtaining the desired finish?

A. Many of the back issues of *Popular Homecraft* have such plans. The last issue (July-August) has plans for a dowelled coffee table and a modern cocktail table; Sept.-Oct. 1948 has two end tables; Jan.-Feb. 1947, nested tables; July-Aug. 1947, end table; and May-June 1947, a coffee table. The following firms also carry plans for end tables and similar pieces of furniture: Delta Mfg. Division Rockwell Mfg. Co., 600 E. Vienna, Milwaukee 1, Wis. E. H. Newman, 4915 Broadway, Dept. PH-1, New York, N.Y. Albert Constantine & Son, Inc., 797 E. 135th St., New York, N.Y. Easi-Bild Pattern Co., Pleasantville, New York. For bleached mahogany finish see letter in "Fix It Yourself" column, this issue.

Q. I would be very grateful if you could help me with my present problem. I desire to make two pairs of twin beds and would like to know some source thru which I could obtain designs and patterns which would help me. I do not wish to make extremely fancy or intricate pieces but a rather substantial and modern set.

A. The following firms have plans for beds: Delta Mfg. Division, Rockwell Mfg. Co., 600 E. Vienna, Milwaukee 1, Wis., Stanleigh Peterson, Space 2455, American Furniture Mart, 666 Lake Shore Drive, Chicago, Ill., Albert Constantine and Son, 797 E. 135th St., New York, N.Y.

Q. Could you advise me where I could get plans for a windmill fan? We have a 40' windmill, but the fan is gone. Also where could I get plans for a farm roadside market stand?

A. There do not seem to be any plans for a windmill fan available. I would suggest that you write to your State Agricultural College for information on this subject. There is a book titled "Windmill Making" that might be of interest to you in this project. For plans for a roadside stand write to the following addresses: National Lumber Mfgs. Assoc., 702 Transportation Building, Washington, D.C. Country Home, 250 Park Ave., New York, N.Y.

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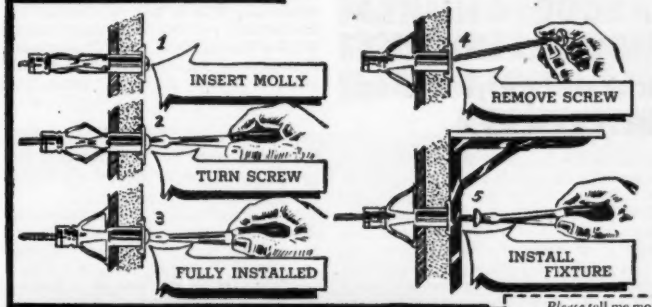

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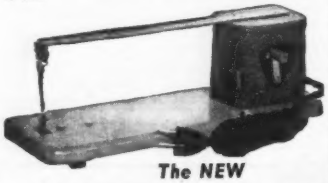

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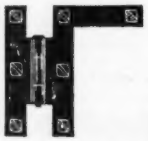
WHO? WHAT? WHERE? HOW? Q AND A

What's your home workshop problem? Ask us your questions—and if we don't know the answers we'll do our best to find them for you without delay.
By Perry S. Graham, Associate Ed.

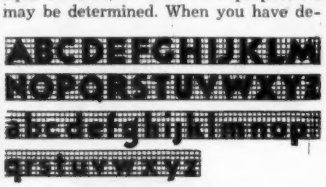
Q. A Canadian reader asks where to buy L-H hinges. He has been unable to find them in Eastern Canada and asks for the name of a manufacturer who makes such a hinge?

A. We are always glad to hear from our Canadian readers. Here are the names of some of the manufacturers of the L-H hinge: The Stanley Works, Hardware Division, New Britain, Conn.; Colonial Forge, Huntington Sta., L. I., N.Y.; P&F Corbin Division, The American Hardware Corp., New Britain, Conn.; Dangil Mfg. Co., Woodside Ave., Bridgeport 6, Conn.; Albert Constantine and Son, Inc., 979 E. 135th St., New York, N.Y., are dealers in fine woods and woodworking equipment; they also have these hinges in dead black finish, to sell in pairs or dozen lots.



Q. Would you have any information on how to cut out letters of wood on a jig saw? I would like to make indoor and outdoor signs by this method.

A. All letters should be drawn on squared lines, so that their proportions may be determined. When you have determined the height of the capital letters, divide the distance between top and bottom lines into five equal divisions and draw the horizontal lines. With a compass take off one of these divisions and step it off along one of the lines and draw lines at a right angle to the horizontal. These produce a series of squares.



From the sketches, as guides, draw the outlines of each letter which you propose to use. These letters should be drawn on a tough, heavy paper, for it is to be used as a pattern which is then transferred to the stock with carbon paper.

Lower case letters have a definite relation to the caps in regard to their height. They are three fifths of the capital height, except in such letters as b, d, f, h, k, and l, where they reach to the top of the cap space. Other letters such as g, j, p and q extend two-fifths below. Letters may be cut from solid or laminated stock, any close-grained wood such as white pine, yellow poplar, gumwood, mahogany, walnut or cherry. The thickness of the stock will depend upon the size of the letters and the depth of effect desired.

Stock from ¼" to ¾" should include the full range of depth. After the letters are cut out with the jig saw the edges should be smoothed before applying any finish. Signs may be finished naturally, in shellac, laquer, or varnish. Or they may be painted or enameled.

In putting the letters together to form a word, it is necessary to place them so that the areas between appear equal. The areas between letters will differ in form because of the shape of letters which adjoin. It is evident that some fit fairly close together, others need more space. It is a matter of eye-spacing for effective appearance. There are many books on lettering which can be a help to the craftsman. See "56 Jig Saw Projects", available from Hobby Books, 814 N. Michigan Ave., Chicago 11, Ill.

Q. Do you know where a person could purchase a tool for pushing brads in plywood? What is the price?

A. The following firms make staplers such as you require. A letter to them will give you the name of your nearest dealer and also the prices—Hansen Mfg. Co., 5037 Ravenswood Ave., Chicago, Ill.; Lang Stapler and Supply Mart, 325 W. Huron, Chicago, Ill.; Duo-Fast Fastener Corp., 4015 N. Damen Ave., Chicago, Ill.

Q. Please send me the names and addresses of firms that make letters of plastic, glass, bronze, brass and stainless steel?

A. Plastic Letters Industries, 188½ N. Wells St., Chicago, Ill., for plastic letters. Western Sand Blast Co., 2015 W. Race St., Chicago, Ill., for glass letters. Michael Art Bronze Co., Court and Lawrence Sts., Covington, Ky., for brass, bronze and aluminum letters. Macklanburg-Duncan Co., Oklahoma City, Okla., for bronze and stainless steel letters. Ralph Watkins, Metalcrafts, 2253 E. 75th St., Chicago, Ill., for bronze and stainless steel letters. Walden Products Co., 3813 Chestnut St., Philadelphia, Pa., for steel, wood, porcelain enameled, aluminum, plastic and bronze letters.

Q. I am trying to locate the manufacturer of music box movements. If you know of one I would appreciate having that information.

A. I do not know of any manufacturers of music box movements in this country, as I believe they are all imported from Switzerland. However, there are several firms that sell these movements. Following is a list. Rogers Music Box Co., 790 McDonald Ave., Brooklyn 18, N.Y.; Bell Music Box Co., Box 49, Planetarium Station, New York 24, N. Y.; Decatur Industries, Decatur, Ill.; Mermod & Co., 125 W. 72nd, New York, N.Y.

Suitable Machinery for Furniture Making

(*Continued from page* 172)

will cut small mortises. It is fine for fluting and reeding of turned legs. Its great advantage is that it can be used on work that has been assembled. In other words, you take the machine to the job. It is easy to handle and costs but a fraction of the price of large machines. Of course, many craftsmen find both types necessary. The motor has a speed of 18,000 r.p.m., which insures smooth cutting even on the end grain.

Kinds of Cutters

There are many different varieties of knives, saws, collars, etc., that are used in shaper work. For small work, the three-lip solid cutter is best. The open-knife type is used for larger cuts, raised panel work and the like. One company puts out a special kind of cutter head for holding three knives that can be used on either a shaper or a circular saw. Cutters also are made for coping work, such as when making the muntins for window sash and similar things.

Four methods are used in shaper operations. The most common is against a fence or guide—(Photo 21). This method is best to use for straight work, strip moldings, etc. The second method is against collars. It is used on curved work—(Photo 23). The third method is shaping with a pattern—(Photo 24) and the fourth way is shaping with a form or sliding jig—(Photo 25).

Shaping also can be done on a drill press that is geared with enough speed. The radial saw also makes a fine shaper and router.

Sanding Machines

Sanding machines of all types take away much of the drudgery from woodworking and frequently make it possible to use wood that otherwise would be too difficult to work smooth.

PHOTO 24—Shaping with a pattern.

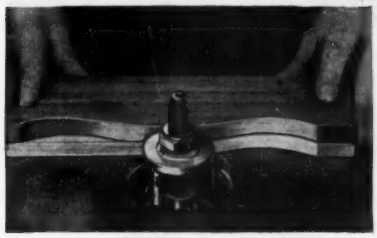


PHOTO 25—Shaping with a form or sliding jig.

There are four types of sanders that are very useful to the craftsman: The continuous belt sander, the disk sander, the drum sander, and the vertical spindle sander.

Continuous Belt Sander

With the continuous belt sander, large flat surfaces can be brought down smooth and true quickly.

On curly and bird's-eye maple and many gnarly pieces of wood, this type of sander is indispensable. Start with a medium coarse grade of sandpaper and work diagonally across the wood (this will quickly remove waves and uneven portions). Then sandpaper with the grain and, finally, use a finer grade of paper to smooth out the scratches made by the coarser paper. To do an expert job, however, it is always necessary to finish up with hand sandpapering.

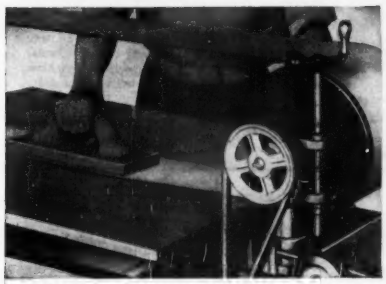


PHOTO 26—Stationary continuous belt sander.

Stationary Continuous Belt Sander

For sanding veneered work and many kinds of large, flat surfaces, use the stationary continuous belt sander—(Photo 26). With this type of machine, just a very light sanding is possible. The amount of pressure exerted on the belt, and the grade of sandpaper being used, determine the cut to be made. A sliding table which supports the work can be rolled back and forth so that all parts are reached. This machine is excellent also for curved work.

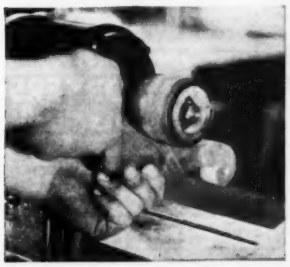


PHOTO 27—Drum sander.

PHOTO 28—Vertical spindle sander.

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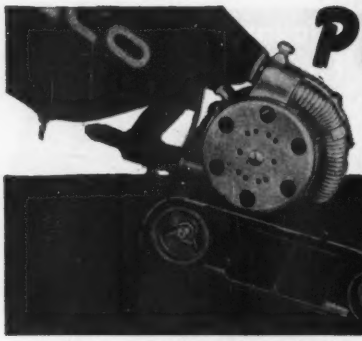

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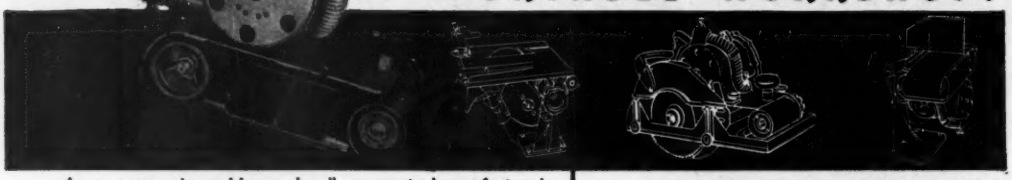

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- Bench sander — (Equipped with vacuum dust collector. Length of belt 2', width 4½". Jig adjustable to 60 degrees.)
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- Bench circular saw. (Saw blade 8" diameter — depth of cut 2¼".)

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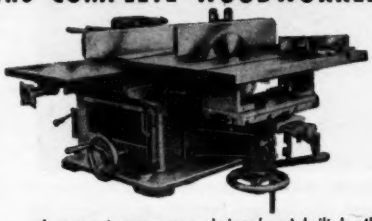

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Disk sanders are excellent for making miter joints, segment work, smoothing end grain, and quickly truing up numerous jobs that constantly confront the craftsman. I would not be without one in my shop.

Drum Sanders

Drum sanders can be used either on the lathe or drill press, for smoothing up all kinds of curved work—rockers, back legs of chairs, etc.—(Photo 27).

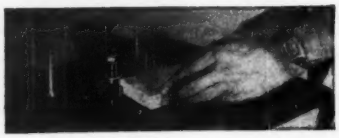

PHOTO 23—Shaping against collar on curved work.

Vertical Spindle Sander

Here is a little machine that will save much labor and do a fine job on all sorts of edge sanding—straight or curved—and is especially good for pierced work so often found in fine furniture making —(Photo 28).

As stated elsewhere, regardless of how much machine sanding you do, the final sandpapering always must be done by hand in order to properly prepare the surface for fine furniture finishing. The sander will, however, do the greater part of the smoothing and do it rapidly and accurately.

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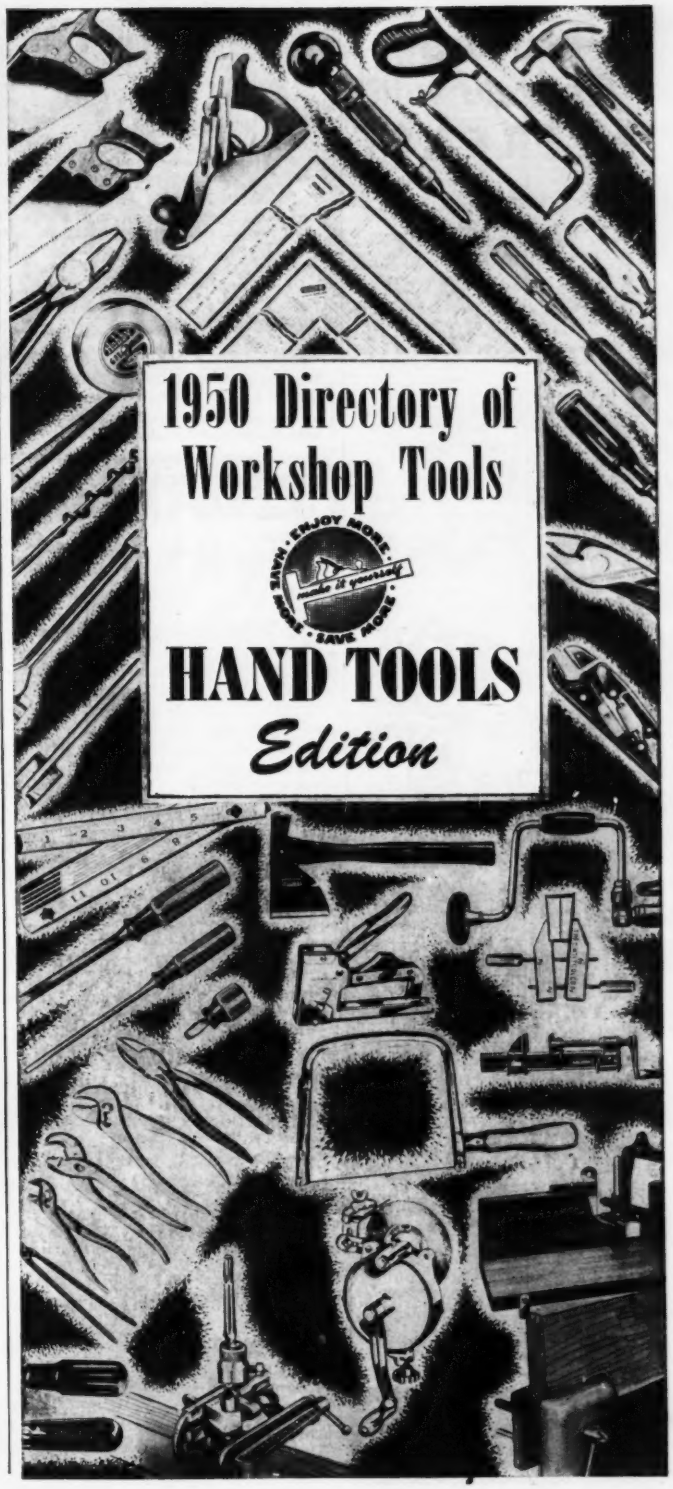

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How to Use This Directory

Here in the next 13 pages is the first of POPULAR HOMECRAFT's 1950 series of directories of workshop tools. You will find it complete, accurate, easy to use, and handy.

Part 1 is a "catalog" of hand tools arranged and sub-divided according to function and kind. Part 2 which begins on page 203 gives the names and addresses of the manufacturers who make the tools listed on page 198 to 203.

The numerals alongside the tools in Part 1 indicate their manufacturers; corresponding numerals precede the companies' names. The letters which follow the company names in Part 2 indicate where and how their respective tools are sold. This is the code:

A—Retail hardware stores
B—Department stores
C—Direct by mail
D—Craft supply shops
E—Art stores
F—Mail order houses
G—Paint stores
H—Woodworking machinery dealers
I—Chain stores
J—Automotive stores
K—Sporting goods stores
L—Hobby stores
M—Mill supply houses
N—Radio supply stores
O—Marine hardware stores

These manufacturers have stated they will gladly send their literature to POPULAR HOMECRAFT's readers at their written request.

In the next issue we will present another complete directory—the electric hand tools (and attachments) edition.

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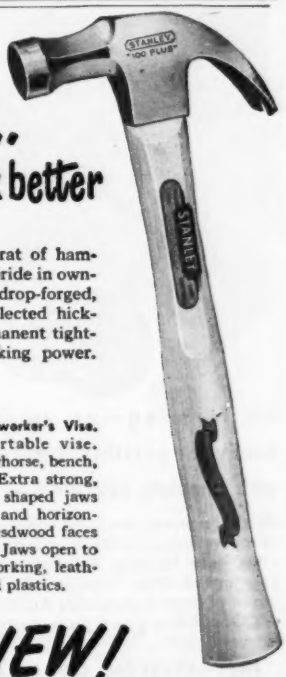

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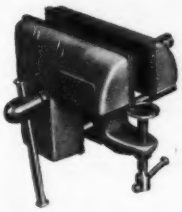

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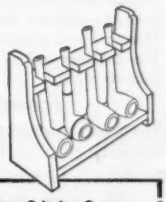

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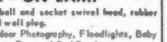

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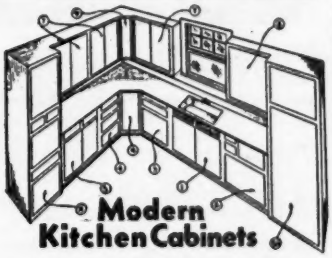

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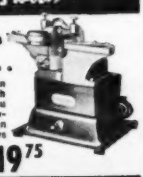

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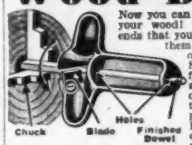

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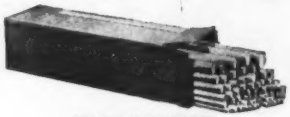

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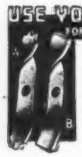

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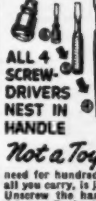

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STAIRWAY

(*Continued from page 177*)

not advisable on outside stairs altho it is the most common practice on high class work. The objection is that the joints open up thru shrinkage and warping. This allows moisture to penetrate into the stringer.

If your risers are to be mitered cut the riser ends at 45°. Getting the cut on the stringer is more complicated because the cut as marked on top of the stringer is not 45°.

Some carpenters lay off the miter by cutting the tread line and then they make an extra cut about 1" out from the riser. When they do this they can lay off the miter at 45°. This is a waste of time inasmuch as it is possible to lay off this cut easily by a simple method (Fig. 9). It is difficult to visualize this method at first. We advise you to perform the job step by step when you attempt it for the first time: 1. Measure the thickness of the stringer stock square back from the riser mark. 2. Project this line parallel with the riser mark to the top edge of the stringer. 3. Square across the edge of the stringer. 4. Draw the diagonal from the riser mark. 5. When this cut is made it will be 45° from the face of the stringer on the tread line.

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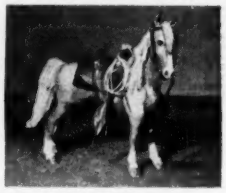

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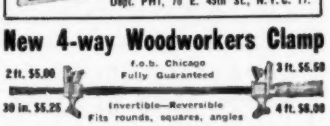

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Inside stairs usually are more finished in appearance. The stair here usually is more finished in appearance. The stair here usually is planned to match the room in which it is used. In recreation rooms the stair is closed in underneath and the wall finished to match the remaining walls. Illustrations used in advertising linoleum and other products is a good source of designs for home built stairs.

In many of these designs the stair is closed in below. The studding for the enclosure supports a closed stringer. The top of the partition is capped with a strip of wood grooved to fit the balusters. A filler strip to fit the groove is cut into pieces between the balusters to support them and to fill the groove.

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STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946.

Of POPULAR HOMECRAFT, published six times a year at Chicago, Ill., for October 1, 1949.

State of Illinois } ss.
County of Cook }

Before me, a Notary Public in and for the State and county aforesaid, personally appeared L. F. McClure, who, having been duly sworn according to law, deposes and says that he is the Editor of the POPULAR HOMECRAFT and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, weekly, semiweekly or triweekly newspaper, the circulation, etc., of the aforesaid publication for the day shown in the above caption, required by the Act of August 24, 1912, as amended by the Acts of March 3, 1933, and July 2, 1946, embodied in section 233, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, L. F. McClure, Chicago, Illinois; Editor, L. F. McClure, Chicago, Illinois; Managing Editor, R. W. Berberick, Chicago, Illinois; Business Manager, Russell C. Johns, Chicago, Illinois.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member must be given.) General Publishing Co., Inc., Chicago, Illinois; L. F. McClure, Chicago, Illinois.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholders or security holders appear upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions, under which stockholders and security holders who do not appear upon the books of the company as trustee, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

L. F. McCLURE, Publisher.

Sworn to and subscribed before me on this 23rd day of September, 1949.

GEORGIA E. CHYNOWETH.

(Seal) (My commission expires October 22, 1950.)

HOMECRAFTERS' MARKET PLACE

Advertisements for this section accepted at the rate of 20c a word, minimum 15 words, payable by February 5th in advance. Count each initial as one word. Name and address must be included. Copy for the March-APRIL, 1950 issue should be sent with remittance to Popular Homecraft, 814 No. Michigan Ave., Chicago 11, Illinois

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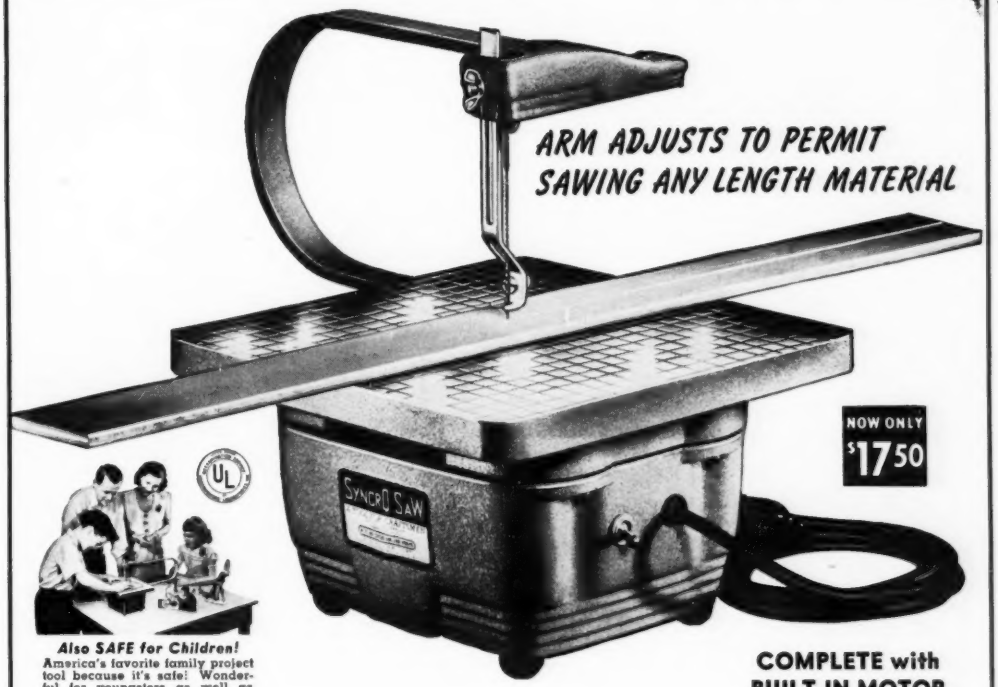

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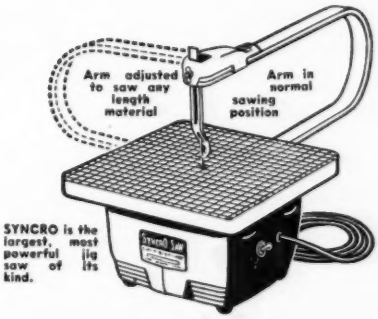
...The SAFE Electric
JIG SAW

The basic homeshop tool for adults yet so safe small children may saw—and do! Thousands used in schools, hospitals, institutions, shops, etc. Easily adjustable. Portable—plugs in any 60 cycle, 110-120 volt A.C. outlet. Handy "off-on" Switch! Arm ADJUSTS permitting cutting any length ½" wood, ¼" plywood, thin metal, plastic. Not a "lumber cutter" but for delicate, fine craftsmanship. Get Syncro—for fun or profit! Should last a lifetime with proper care. Complete with BUILT-IN MOTOR, 3 blades, cord, plug, $17.50 AT DEALERS! If he hasn't it, send $17.50 to factory, we'll ship Saw postpaid.



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THREE TOOLS IN ONE

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MAKES PLAY OF WAX POLISHING

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